

# 2040 METROPOLITAN TRANSPORTATION PLAN



**MOUNTAINLAND**  
METROPOLITAN PLANNING ORGANIZATION



PLANNING FOR  
THE FUTURE

ADOPTED  
MAY 5, 2011

**MOUNTAINLAND METROPOLITAN PLANNING ORGANIZATION**

**MOUNTAINLAND ASSOCIATION OF GOVERNMENTS**

**REGIONAL PLANNING**

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# **2040 METROPOLITAN TRANSPORTATION PLAN**

**2011 - 2040**

## **MOUNTAINLAND METROPOLITAN PLANNING ORGANIZATION**

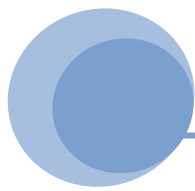
|                                          |                               |
|------------------------------------------|-------------------------------|
| <b>ALPINE CITY</b>                       | <b>MAPLETON CITY</b>          |
| <b>AMERICAN FORK CITY</b>                | <b>OREM CITY</b>              |
| <b>CEDAR FORK TOWN</b>                   | <b>PAYSON CITY</b>            |
| <b>CEDAR HILLS CITY</b>                  | <b>PLEASANT GROVE CITY</b>    |
| <b>DRAPER CITY</b>                       | <b>PROVO CITY</b>             |
| <b>EAGLE MOUNTAIN CITY</b>               | <b>SALEM CITY</b>             |
| <b>ELK RIDGE CITY</b>                    | <b>SANTAQUIN CITY</b>         |
| <b>FAIRFIELD TOWN</b>                    | <b>SARATOGA SPRINGS CITY</b>  |
| <b>GENOLA TOWN</b>                       | <b>SPANISH FORK CITY</b>      |
| <b>GOSHEN TOWN</b>                       | <b>SPRINGVILLE CITY</b>       |
| <b>HIGHLAND CITY</b>                     | <b>VINEYARD TOWN</b>          |
| <b>LEHI CITY</b>                         | <b>WOODLAND HILLS CITY</b>    |
| <b>LINDON CITY</b>                       | <b>UTAH COUNTY</b>            |
| <b>UTAH DIVISION OF AIR QUALITY</b>      | <b>UTAH TRANSIT AUTHORITY</b> |
| <b>UTAH DEPARTMENT OF TRANSPORTATION</b> |                               |

**ADOPTED 5 MAY 2011**

**MOUNTAINLAND ASSOCIATION OF GOVERNMENTS**  
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## **ACKNOWLEDGE**

**“THE PREPARATION OF THIS REPORT HAS BEEN FINANCED IN PART THROUGH GRANT(S) FROM THE FEDERAL HIGHWAY ADMINISTRATION AND FEDERAL TRANSIT ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION, UNDER THE METROPOLITAN PLANNING PROGRAM, SECTION 104(F) OF TITLE 23, U.S. CODE. THE CONTENTS OF THIS DOCUMENT DOES NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE U.S. DEPARTMENT OF TRANSPORTATION.”**



# Metropolitan Transportation Planning

## INTRODUCTION

Utah County is growing very quickly. Between 2000 and 2010, the population increased from 368,536 to 516,564, an unprecedented 40% expansion in only ten years. Projections show county population will be approximately 1.1 million by the year 2040. Such rapid growth places heavy demands on the transportation system and can subsequently reduce air quality.

The Utah County region is classified by the Environmental Protection Agency as non-attainment for particulate emissions (PM<sub>10</sub>), and Provo is a maintenance area for carbon monoxide (CO). Large urban areas so designated must meet certain transportation planning requirements to be eligible to receive federal transportation funds. Federally established Metropolitan Planning Organizations (MPO's) perform these planning requirements.

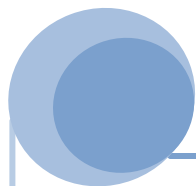
Mountainland Association of Governments (MAG) is the designated MPO for Utah County.

As one of four MPO's in Utah, Mountainland provides a forum where local officials, public transit providers, and state transportation departments come together and cooperatively plan to meet the region's current and future transportation needs. This effort results in the Metropolitan Transportation Plan (MTP), the document which lays out which major transportation projects are built, while conforming to the requirements of the Federal Clean Air Act (CAA).

The MTP specifies a coordinated system of capital-intensive roadway projects, pedestrian/bicycle facilities, and transit improvements needed during the next thirty years. The MTP attempts to minimize impacts to our society and environment while providing for enough capacity and transportation choices to ensure our region's economic competitiveness. In short, the MTP is a guide to maintain and enhance our regional transportation system and the economy that depends upon it.

UTAH VALLEY





# Metropolitan Transportation Planning

## METROPOLITAN TRANSPORTATION PLAN UPDATE

The development and update of the Metropolitan Transportation Plan occurs every four years. The frequency of updates allows MPO decision makers to keep up on emerging trends. All of the sections of this document have been updated using current data with a planning horizon exceeding the required 20 years (to 2040). Project funding is phased in ten year increments, 2020, 2030 and 2040.

This iteration of the MTP follows the guidelines of the last federal transportation bill - Safe, Accountable, Flexible, Efficient, Transportation Equity Act - A Legacy for Users and embodies them philosophically as well as technically. The Federal Highway Administration (FHWA) requires each MPO to address eight specific planning factors, and the MTP incorporates those requirements.

### **PLANNING FACTORS**

The continuing Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) bill states that the metropolitan planning process shall be continuous, cooperative, and comprehensive. The process will also provide consideration and implementation of projects, strategies, and services to address the following factors:

1. **Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.**
2. **Increase the safety of the transportation system for motorized and non-motorized users.**
3. **Increase the security of the transportation system for motorized and non-motorized users.**

4. **Increase accessibility and mobility of people and freight. (See Appendix - Freight in the MPO)**
5. **Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.**
6. **Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.**
7. **Promote efficient system management and operation.**
8. **Emphasize the preservation of the existing transportation system.**

### **MPO PRIORITIES**

In addition, locally determined priorities guide and inform the planning process. Over the next 30 years, Utah County's population will grow to 1.1 million. Other large metro areas such as Oklahoma City, Raleigh, Richmond, and Salt Lake City are at this size today. Each has multiple freeway networks and broad mass transit options.

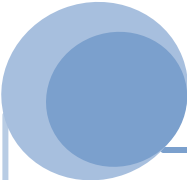
### **VISION STATEMENT**

Provide an intermodal transportation system that efficiently moves people and freight to fuel our economy while retaining the unique western character of the Wasatch Mountains.

### **LOCAL GOALS**

Transportation in Utah County is evolving from a primarily rural to an urban system, and major facilities such as freeways, expressways, light rail, and bus rapid transit will be needed to supplement today's more limited choices that are tightly focused on single occupant vehicles. This evolution will focus on three primary areas:

1. **Fund New Capacity:** Within the last two years a major infusion of funding has



# Metropolitan Transportation Planning

greatly helped to reduce the backlog of needed transportation facilities created during the unprecedented growth of the last two decades. Projects completed or underway include I-15 CORE, Timpanogos Highway (SR-92), Redwood Road, Pioneer Crossing, North County Blvd, Geneva Road, Springville 400 South, and FrontRunner Commuter Rail. Total funding has exceeded \$3 billion. However, with continued growth, attention and focus will shift to keeping up with demand less intensive but steadier improvements to the system. The MTP indicates needs and demonstrates adequate funding scenarios for major system upgrades.

2. ***Build an intermodal transportation system:***

The MTP seeks to continue development of a coordinated intermodal system of highway, transit, and non-motorized improvements. Projects that are intermodal in nature were given added priority ranking during alternatives analysis. The plan provides for a non-motorized transportation system linking residential areas with major destinations, such as schools, shopping, employment, and services. This system connects to the transit system so that longer trips can be taken by walking or biking to the bus. This will enhance access to major destinations, reduce congestion, and improve air quality

3. ***Take Care of What We Have and Make it Work Better:*** Keeping Utah's bridges and pavements in good condition is the most effective way to extend the life of the transportation system.

- a. UDOT maintains a multi-billion dollar system by:
- Applying well-timed preservation treatments
  - Addressing critical needs first
  - Keeping Utah's roads open during storms

b. Optimize traffic mobility by:

- Making improvements that reduce delay on freeways, at intersections and along major corridors
  - Providing useful information to help people move more efficiently
  - Clearing crashes quickly to maintain the free flow of traffic
- 

## PLANNING ORGANIZATION AND PROCESS

The MTP is a major product of the Metropolitan Planning Organization and results from a process that integrates the efforts of all of the agencies involved in transportation and incorporates local priorities with state and federal resources.

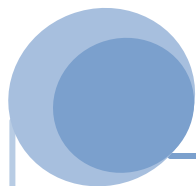
### ***MPO STAFF***

The MPO staff is multi-disciplinary, and includes land use, highway, transit, non-motorized, air quality, and Geographic Information System professionals. They are responsible for producing the Metropolitan Transportation Plan for Utah County, and report to the Mountainland MPO Regional Planning Committee (RPC).

### ***REGIONAL PLANNING COMMITTEE***

The RPC is made up of local elected officials from each incorporated municipality and the Utah County Commission, a representative from the Utah Transportation Commission, Utah Transit Authority Board, and Utah Division of Air Quality. Representatives from the Federal Highway Administration, Utah State Legislature, Wasatch Front Regional Council's TransCom Committee, freight companies, private passenger carriers, and the airports are invited to attend meetings as non-voting members.

The RPC reviews and approves the MTP, Transportation Improvement Program (TIP), Air Quality Policy and Conformity Analysis, and all other urban transportation plans and programs for the metropolitan area.



# Metropolitan Transportation Planning

## **TECHNICAL ADVISORY COMMITTEE**

The RPC and MPO staff is advised by the Mountainland Technical Advisory Committee (TAC). The TAC is comprised of engineers, planners, and technicians who serve as staff members to local, state, and federal government as well as service district and private sector representatives from freight and passenger carrier providers. This committee is advisory in nature and serves as a forum for the discussion of transportation related technical issues and makes recommendations to the RPC.

## **UTAH VALLEY TRAIL PUBLIC ADVISORY COMMITTEE**

This committee includes local city staff members and citizens; they meet regularly to discuss pedestrian safety, bike, and trail issues.

## **JOINT POLICY ADVISORY COMMITTEE**

The member organizations of the Joint Policy Advisory Committee (JPAC) have joined to improve communication and coordination on transportation issues for the four urbanized areas in the State of Utah. JPAC functions as an advisory body to its member agencies.

Members agree to share information about current and future travel in urban areas, future funding needs, and other critical transportation performance measures and issues. Members have the opportunity to reach consensus on how to meet the transportation challenges facing the urbanized areas in the state.

Member Agencies:

- Mountainland Association of Governments
- Wasatch Front Regional Council
- Utah Department of Transportation
- Dixie Metropolitan Planning Organization
- Cache Metropolitan Planning Organization
- Utah Transit Authority

## **LOCAL PLANNING COORDINATION**

In developing the metropolitan transportation plan the fundamental relationship between transportation and land use should be recognized and the effects that land use and growth have on transportation considered. As one of the fastest growing metropolitan areas in the United States, coordination with local land use plans is essential to the creation of an efficient and effective transportation system.

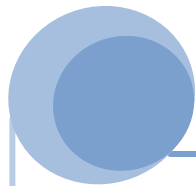
The linkage between land use and transportation is a complex issue. However on a much more simple level the linkage can be thought of as working in two ways:

- The spatial distribution and type of land use activity influences both the demand for travel and travel characteristics. Different types of land use generate and attract differing traffic rates. For example, retail land uses will generate more trips than residential land uses.
- Improving access by expanding the transportation system allows for the development of land at higher intensities or land that was previously inaccessible.

## **LAND USE PLANS**

Comprehensive plans are the means by which local jurisdictions plan for their future growth and development. The development of these plans provides a process for anticipation and influencing the orderly and coordinated development of land. Each plan is required to have a land use element showing the general distribution and location of land for various uses, as well as a circulation element showing the street system and transportation routes. Local comprehensive plans are the basis for defining and integrating land use and transportation and are the foundation of this plan.





# Metropolitan Transportation Planning

## CURRENT CONDITIONS

The distribution of household population density is centered in the Orem/Provo area. The highest growth area over the last decade has been in the northeast county area straddling the I-15 Freeway, and in the northwest area of new developments in Eagle Mountain and Saratoga Springs. This is mainly attributed to the Salt Lake City and Provo/Orem Metro areas converging together. Growth has also accrued in the southern area of Utah County, but densities still remain at rural densities with the historic cores expanding. The far western and south west portions of the county have experienced no growth and have little or no population.

## FUTURE GROWTH

By 2040, residential densities will continue to increase outside the Orem/Provo core resulting in population becoming more urban between northeastern and central portions of the county. The Orem/Provo area retains its core status as the population and employment center, but northward along the I-15 freeway and into Salt Lake County, similar densities occur. The northwestern county area adds more urban density, but is still emerging into self sustaining community. The southern area continues to have growth ringing out from the historic cores and become less rural, but densities remain low. Some growth is projected to occur in the southwest area of the county, but the far western area has little growth.

## LOCAL JURISDICTIONS COORDINATION

In developing future land use development patterns for the traffic model, MPO staff use each municipal and the county land use plan as a first step in creating future countywide development patterns. Many land use plans only plan for the next 10 years leaving a gap between their planning horizon and the needs of the 2040 transportation plan. MPO staff met

with each municipality and the county to review their plans and to gain additional insight of where future growth could occur. Also, any major proposed developments are also designed in the future countywide generalized land use plan. Goals of the Wasatch Choices 2040 plan are also incorporated into future development patterns. The finalized land use plan for the transportation plan is used to develop the socio-economic data needed to run the travel model. This data includes population, households, and employment.

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## MOUNTAINLAND AREA CHARACTERISTICS

### GEOGRAPHY

The Mountainland MPO is located at the southern end of the rapidly growing metro area along the Wasatch Front. The MPO planning area boundary encompasses all the Utah County municipalities and the contiguous unincorporated areas in between. The MPO area is bounded on the north by the Salt Lake County-Utah County line; on the east by the Wasatch Mountain Range; to the south by Utah-Juab County line, and extends west to Cedar Fort. (See MPO Map)

Land use and the locations of major transportation facilities are constrained by a peripheral boundary of steep mountain terrain and by the large, centrally located Utah Lake. The MPO is roughly bisected by I-15, the only freeway within Utah County. A number of smaller state routes complete the system of arterial routes and provide both East-West and North-South corridors. Existing conditions make selection and location of new facilities a real challenge.

### ENVIRONMENT

Air quality is a major environmental concern in Utah County. The valley is surrounded by high mountains, which often create winter



# Metropolitan Transportation Planning

temperature inversions that can trap pollutants in the area for days at a time.

Utah Lake and surrounding wetlands play an important role in the area's environment. Utah Lake is also a critical link in the migratory bird flight path from Canada to Mexico. The lakebed is so shallow a rise in the water elevation of a mere few feet can flood hundreds of acres of land and cause major impacts on housing, wildlife, agriculture, industry, recreation, and transportation facilities.



**UTAH LAKE WETLANDS A MIGRATORY BIRD FLIGHT PATH FROM CANADA TO MEXICO**

The proximity of Utah Lake and the Wasatch Mountains offer excellent opportunities for recreation and other uses, thus helping to attract and retain many residents, but limit developable land and constrain transportation facilities.

## AIR QUALITY AND TRANSPORTATION CONFORMITY

Federal funding and approvals for transportation improvement projects in urban areas are required to be part of the planning process involving all affected local governments. The process is documented through the MPO's Metropolitan Transportation Plan and the 5-year Transportation Improvement Program. Since the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A legacy for Users (SAFETEA-LU) and the 1990 Clean Air Act

Amendments, MPOs are required to comply with the requirements of these acts. The Metropolitan Transportation Plan and Transportation Improvement Program should conform to the State Implementation Plan for air quality.

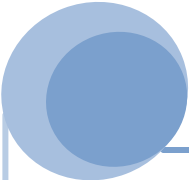
Utah County is designated as moderate non-attainment for PM<sub>10</sub>. Provo City is designated as a maintenance area for Carbon Monoxide. Conformity rules outline specific analysis requirements that non-attainment areas must follow depending on the severity of the non-attainment problem and the time frame established by the Clean Air Act to develop and implement plans to correct the air quality problem. These rules require the MPO to show air quality conformity for the life of the Transportation Plan, which is to the year 2030.

A detailed discussion of the analysis employed in the conformity determination is a section of the plan entitled Conformity Determination for the 2040 Metropolitan Transportation Plan. Based on the analysis consistent with these rules, a positive determination can be made for the Metropolitan Transportation Plan for the Utah County PM<sub>10</sub> non-attainment area and for the Provo carbon monoxide maintenance area

## APPLICABLE CLEAN AIR ACT REQUIREMENTS AND CONFORMITY RULES

SAFETEA-LU and the relevant elements of the 1990 CAAA Subsections 176(c)(1)(2) and (3), requires the MPO to develop a transportation plan that conforms with the applicable State Implementation Plan (SIP) for air quality.

The EPA Transportation Conformity Rules (40 CFR Part 93) and FHWA/FTA Metropolitan Planning Regulation (23 CFR Part 450) were employed in the preparation of this conforming Long Range Plan. The following list describes the appropriate subsections of 40 CFR Part 93 the plan must meet:



# Metropolitan Transportation Planning

- 93.110 – Latest Planning Assumptions
- 93.111 – Latest Emission Model
- 93.112 – Consultation
- 93.113(b) – Transportation Control Measures
- 93.118 – Emission Budget(s) or
- 93.119 – Emission Reduction

## ***COORDINATION WITH CLEAN AIR AGENCIES***

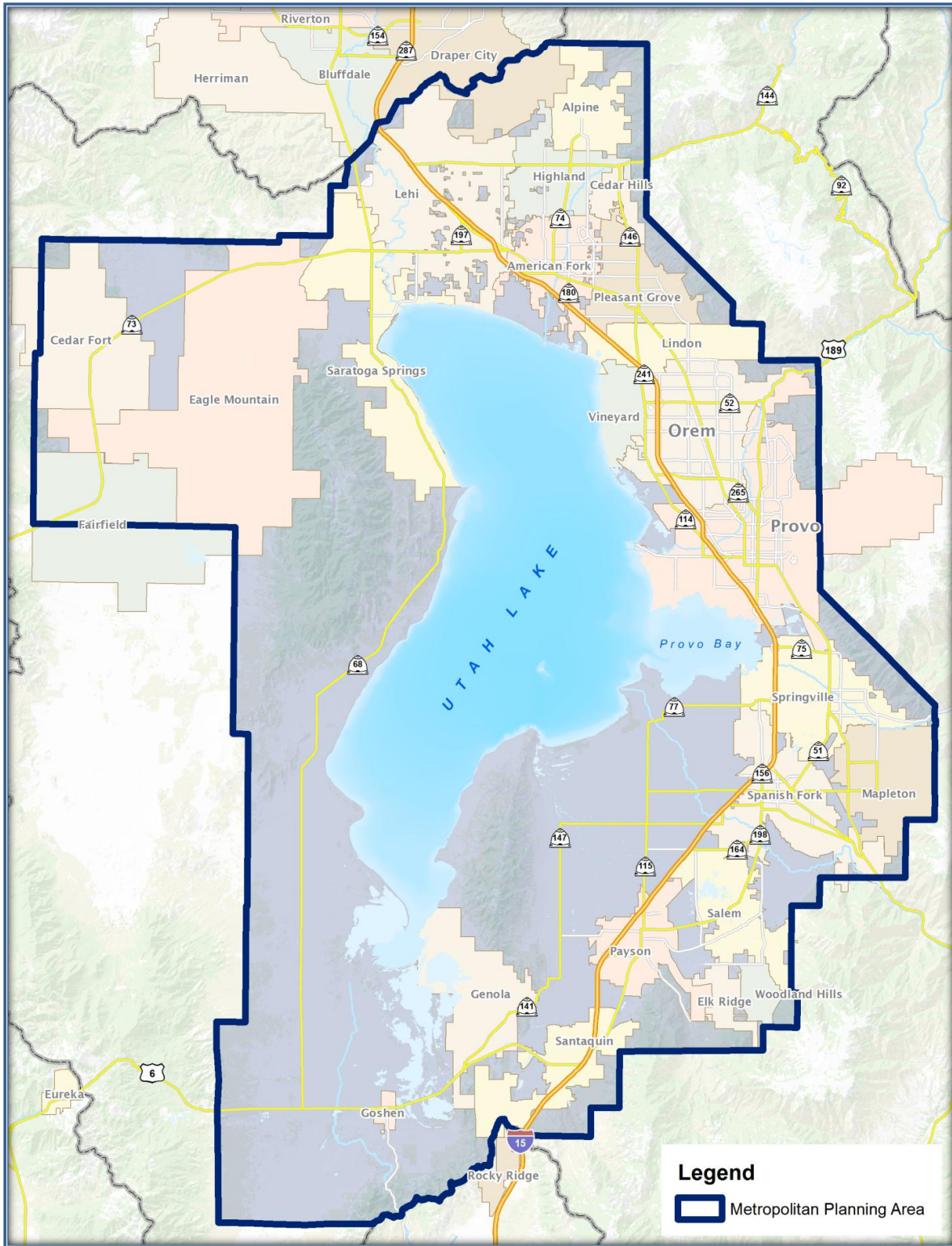
As stated in the Transportation bill, metropolitan areas which are non-attainment for ozone or carbon monoxide under the Clean Air Act are required in conjunction with the area's air agencies and transportation partners to coordinate the development of consultation procedures for a process of development of the transportation control measures of the State Implementation plans. A Memorandum of Understanding has been established between UDOT, Utah Division of Air Quality (UDAQ), and Mountainland to be followed by a State Consultation Procedures Plan that is currently under development.

The Mountainland Regional Planning Committee and UDAQ have agreed upon a committee structure for making air quality policy decisions for the region's transportation plans.

The presence of UDAQ on the Mountainland Regional Planning and Technical Advisory Committees has greatly improved communications between Air Quality and Transportation Planning activities. In conjunction with the conformity determination we have established an Interagency Coordination Committee that includes representatives of FHWA, UDOT, UDAQ, EPA, Mountainland, and WFRC. These meetings have improved the consultation process resulting in a successful plan consistent with the federal planning regulations and the SIP. For more detail see the Appendix - Air Quality Conformity Determination.

# Metropolitan Transportation Planning

## METROPOLITAN PLANNING AREA MAP



# WASATCH CHOICE FOR 2040

## BUILDING THE FUTURE WE WANT

The Greater Wasatch is one region, stretching from Weber County south to Utah County and from Tooele County east to the Wasatch Back. We compete economically with other regions, comprise one job and house market, and we share the same air and water. Where and how we shape tomorrow's neighborhoods, communities, and economic centers within our region will dramatically affect the quality of life, including how much time and money we spend getting around, the quality of the air we breathe, and the choices we have available to live, work, shop, and play.

The Wasatch Choice 2040 is a vision for how growth should unfold in our region. When compared with the baseline (a projection of current trends in the future), the Wasatch Choice exhibits distinct benefits.

### HIGHLIGHTS

Walkable communities: new homes are about twice as likely as today's homes to have convenient access to places to work, shop, play, and learn.

- More growing up, less growing out: 40% more of our growth, compared to recent trends, fill in existing communities and revitalizes business districts. This enables more biking, shorter commutes, better air quality, and makes the most of existing infrastructure.
- Real options for commuters: Average household transit use in 2040 could be 45% higher than today, making commuting more affordable and providing residents with more ways to get around.
- More open land stays open: Over the next 30 years, 24 fewer square miles convert to buildings and streets enabling us to have more green

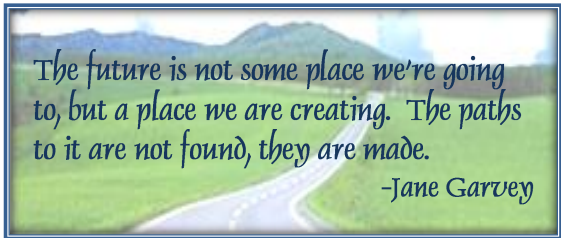
infrastructure and open land, with benefits ranging from more places for families to play, more local farmer's market food, better water quality, and more wildlife habitat.

### CHALLENGE AND OPPORTUNITY

Utah is among the fastest growing states in the nation. Growth brings both benefits and challenges:

- Two-thirds of the buildings that will exist in 2040 have not yet been built
- Total investment in new development will approach \$700 billion
- More than 900,000 growth-related residential units will be constructed by 2040
- Nearly 1.9 billion square feet of new and rebuilt space will be needed to accommodate the projected 2.9 million jobs we'll have by 2040
- The Wasatch Front has limited land available for development and building roads to serve widely dispersed populations will become increasingly impractical and expensive

Mountainland MPO encourages cities to explore a mix of activities and walkable development to reduce the need for long drives and provide residents with what they want out of life: more time for what matters most, affordability, family, improved health, and the pride of living in a world-class region.



*The future is not some place we're going to, but a place we are creating. The paths to it are not found, they are made.*

*-Jane Garvey*



# WASATCH CHOICE FOR 2040

## The Wasatch Choice for 2040 Vision Map

The Greater Wasatch is one region, stretching from Weber County south to Utah County and from Tooele County east to the Wasatch Back. We compete economically with other regions, comprise one job and housing market, and share the same air and water. Where and how we shape tomorrow's neighborhoods, communities, and economic centers within our region will dramatically affect the quality of our lives, including how much time and money we spend getting around, the quality of the air we breathe, and the choices we have available to live, work, shop, and play.

### Greenspace

Greenspace rings our valleys, connects our cities, and provides space for civic and social functions in our towns and neighborhoods. The Wasatch Choice for 2040 affirms that our natural resources and working lands provide immense benefits. We should safeguard them to preserve our regional food system, protect our water quality, and maintain our recreational opportunities. These lands also provide needed wildlife habitat, help to clean our air, and provide relief from our urban environment. Even closer to home, our parklands and greenways provide critical gathering spaces, recreational amenities, and connection to the natural world.



#### Regional Greenways

The Bonneville Shoreline Trail, the Jordan River Parkway, and the Provo River Parkway

#### Regional Connections

Links between greenways and greenways and major population centers



#### Green Context

The Wasatch and Ogden Mountains, the Great Salt Lake, and Utah Lake

### Centers

Centers are historical and emerging regional destinations of economic activity. The vision suggests that these centers should expand to provide ever-broadening choices for residents to live, work, shop and play; a mix of all of these activities is welcome. Centers should work with the long-term market, helping provide opportunities to residents who want to live close to work, walk or bike to shop, and have both great transit and road access – desperately needed as our population ages, gas prices and congestion increase, and housing prices inch upward.

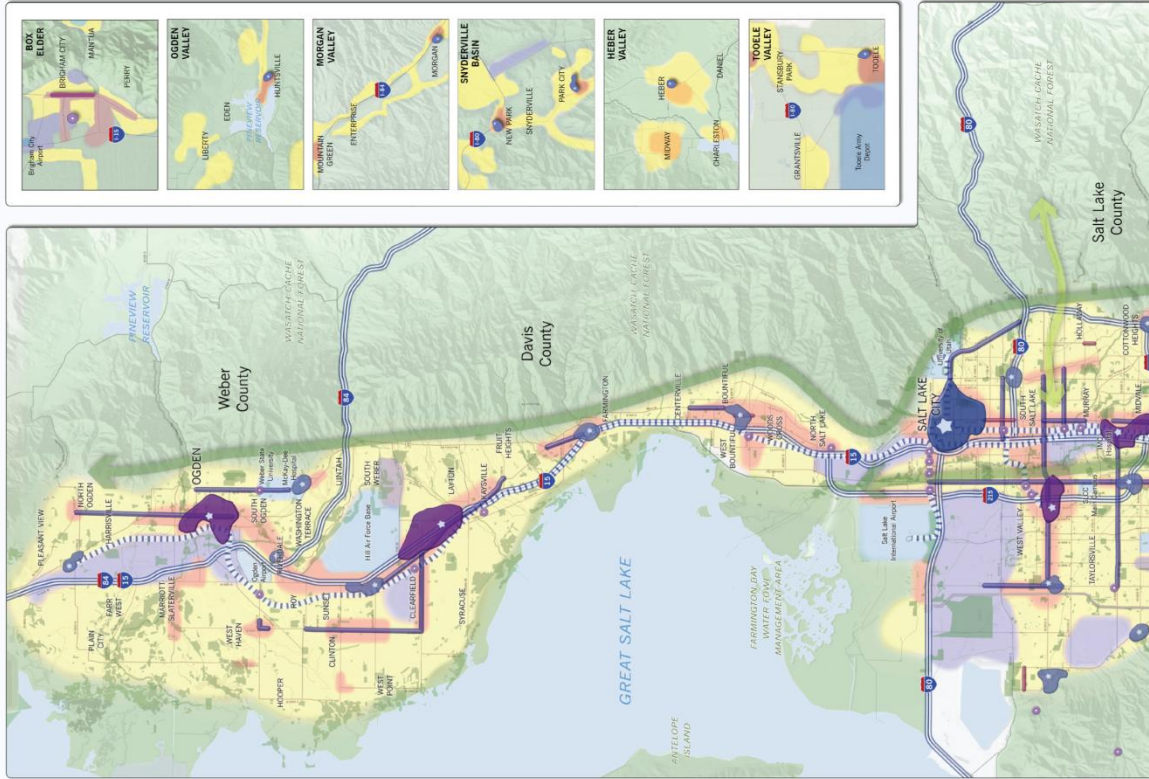


#### Metropolitan Center

Downtown Salt Lake City is the metropolitan center, serving as the hub of business and cultural activity in the region. It has the most intensive form of development for both employment and housing, with high-rise development common in the central business district. It will continue to serve as the finance, commerce, government, retail, tourism, arts, and entertainment center for the region.



Floor Area Ratio 1 to 10  
20 to 200 Housing Units per Acre



# WASATCH CHOICE FOR 2040

## Urban Center

Urban centers are the focus of commerce and local government services benefiting a market area of a few hundred thousand people. Urban centers will be served by high-capacity transit and major streets. They are characterized by two- to four-story employment and housing options.



Floor Area Ratio 0.75 to 4  
20 to 100 Housing Units per Acre

## Town Center

Town centers provide localized services to tens of thousands of people within a two- to three-mile radius. One- to three-story buildings for employment and housing are characteristic.



Floor Area Ratio 0.5 to 1.5  
10 to 50 Housing Units per Acre

## Station Community

Station communities are geographically small, high-intensity centers surrounding high-capacity transit stations. Station communities vary in their land use; some feature employment, others focus on housing, and many will include a variety of shops and services.



Floor Area Ratio 0.5 to 2.5  
20 to 100 Housing Units per Acre

## Main-Street Community

Main streets are linear town centers. Each has a traditional commercial identity but on a community scale. Main-street communities prioritize pedestrian-friendly features, but also benefit from good auto access and often transit.



Floor Area Ratio 0.5 to 1.5  
10 to 50 Housing Units per Acre

## Boulevard Community

A boulevard community is a linear center coupled with a transit route. Unlike a main street, a boulevard community may not necessarily have a commercial identity, but may vary among housing, employment, and retail along any given stretch.



Floor Area Ratio 0.35 to 1.0  
0 to 50 Housing Units per Acre

## Corridors

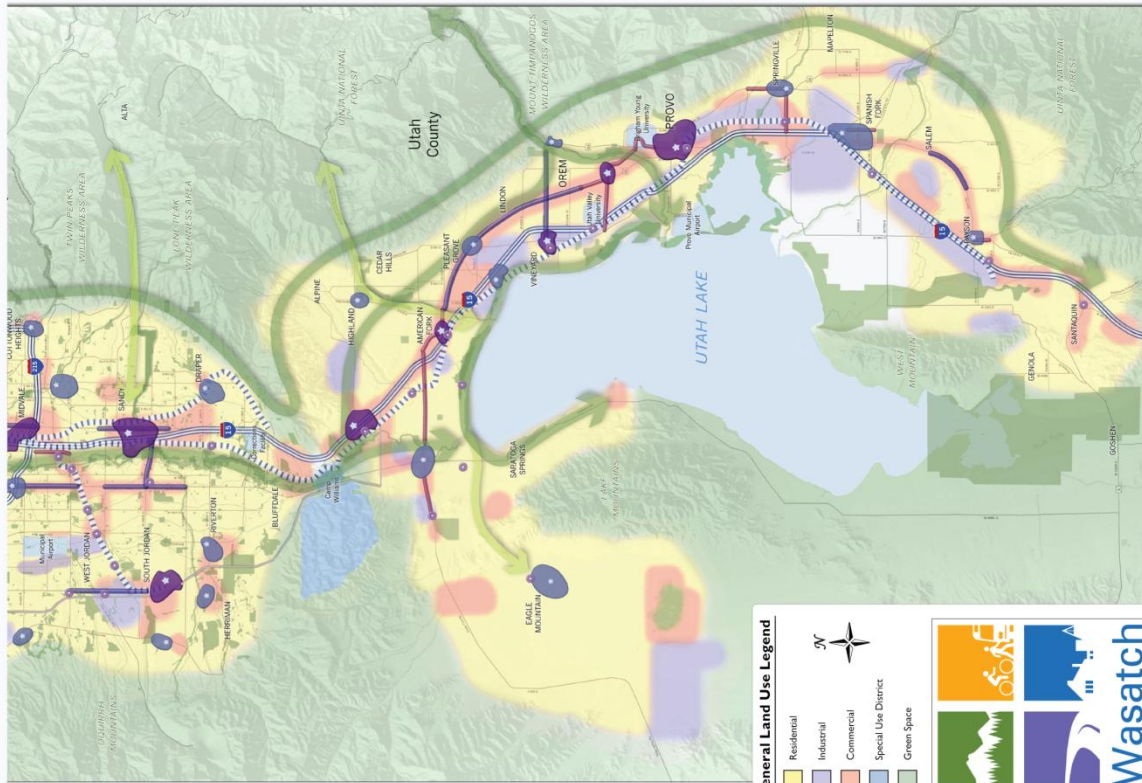
Corridors combine a mix of uses—retail, offices, and residences—with multiple transportation options (sidewalks, bike lanes, roadways, and public transportation). Two types of corridors are identified in the Vision: Boulevard Communities and Main Streets. Examples of Boulevard Communities might include State Street or Redwood Road—with higher traffic volumes, yet envisioned as multi-modal boulevards with public transportation systems supporting increased residential, office, and commercial development. Main Street examples might include Magna or Lehi—more historic in character with lower traffic volumes, wider sidewalks, and more on-street parking.



Commuter Rail / TRAX



Freeways



## General Land Use Legend

- Residential
- Industrial
- Commercial
- Special Use District
- Green Space





# 2040 METROPOLITAN TRANSPORTATION PLAN

## TRAVEL DEMAND

The MPO uses a computer-based transportation model to determine current travel demand and then make forecasts of future travel volumes and locations. The model is calibrated using known trip rates, transit ridership and highway traffic counts to reasonably represent “base year” travel conditions and patterns (as of 2007). This is a process in which model output is checked against real-world data.

Using socio-economic and land use trends, along with input and feedback from member agencies, the model is used to test improvement scenarios and mode mixes for satisfying future needs. Model outputs are used to advise and inform decision makers how to best keep up with emerging trends and implement timely course changes. Good modeling helps local leaders answer some big questions, such as: Where are upgraded or new highways most needed? What effects will increased access to transit have on congestion or air quality? When are changes needed?

### **MODEL OVERVIEW**

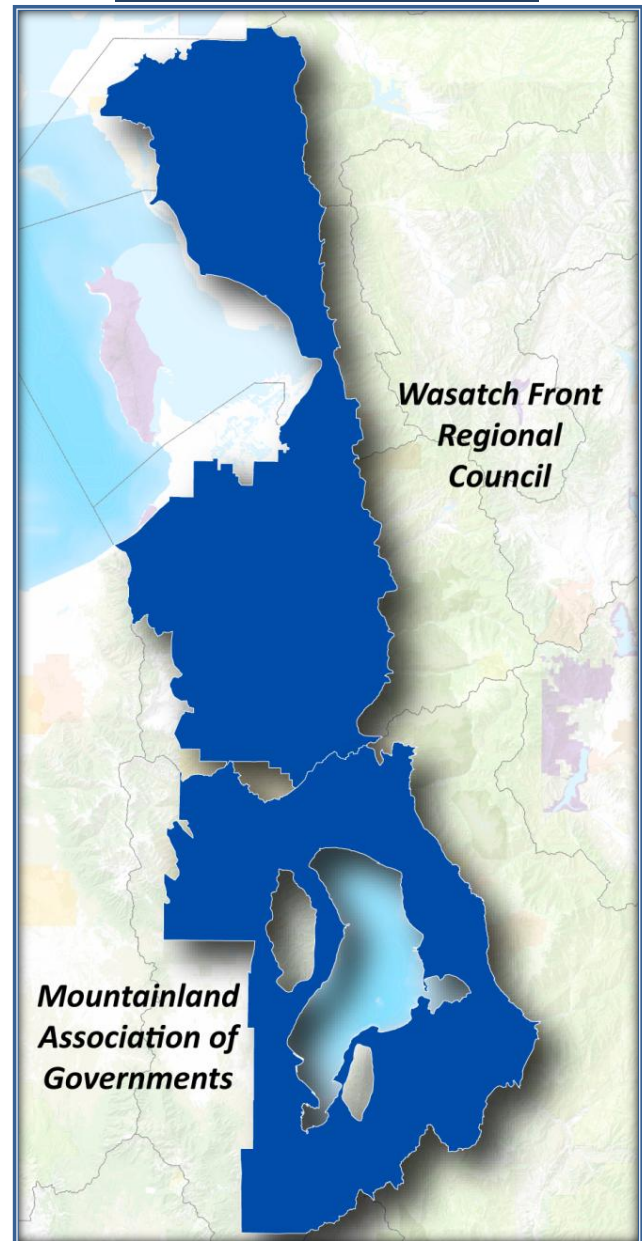
The MPO model covers the entire Wasatch Front, with approximately 31,000 road links. The transit network is created with local, express, Bus Rapid Transit, Light Rail, and Commuter Rail lines.

The software is an integrated land-use, socio-economic, transportation, and air quality model co-developed with the Wasatch Front Regional Council to satisfy the requirements of SAFETEA-LU and the federal Clean Air Act. Some of the most useful model outputs to aid in project selection include:

- Peak travel times demand
- Origin-Destination flows
- Vehicular travel times and speeds
- Transit ridership numbers

For details refer to Appendix - Travel Demand

### TRAVEL MODEL COVERAGE AREA



# 2040 METROPOLITAN TRANSPORTATION PLAN

## LAND USE MODELING

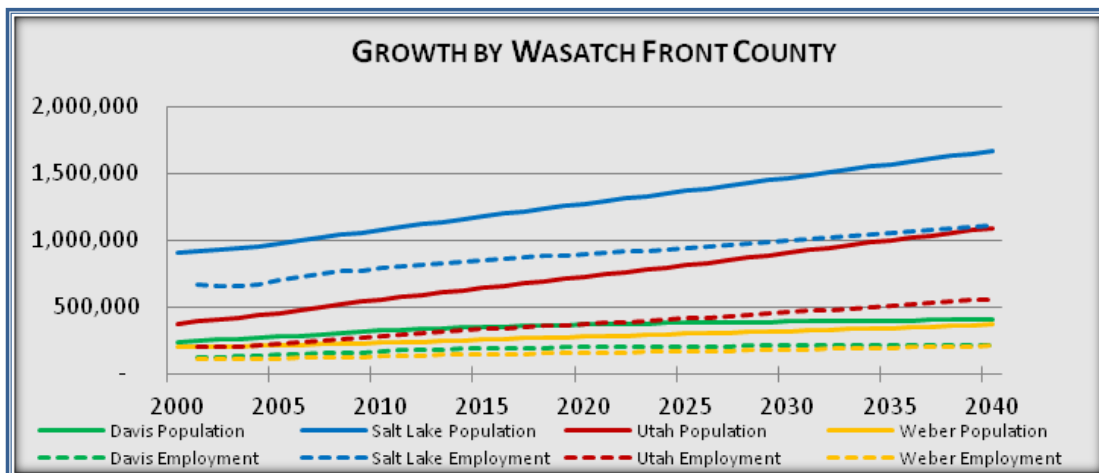
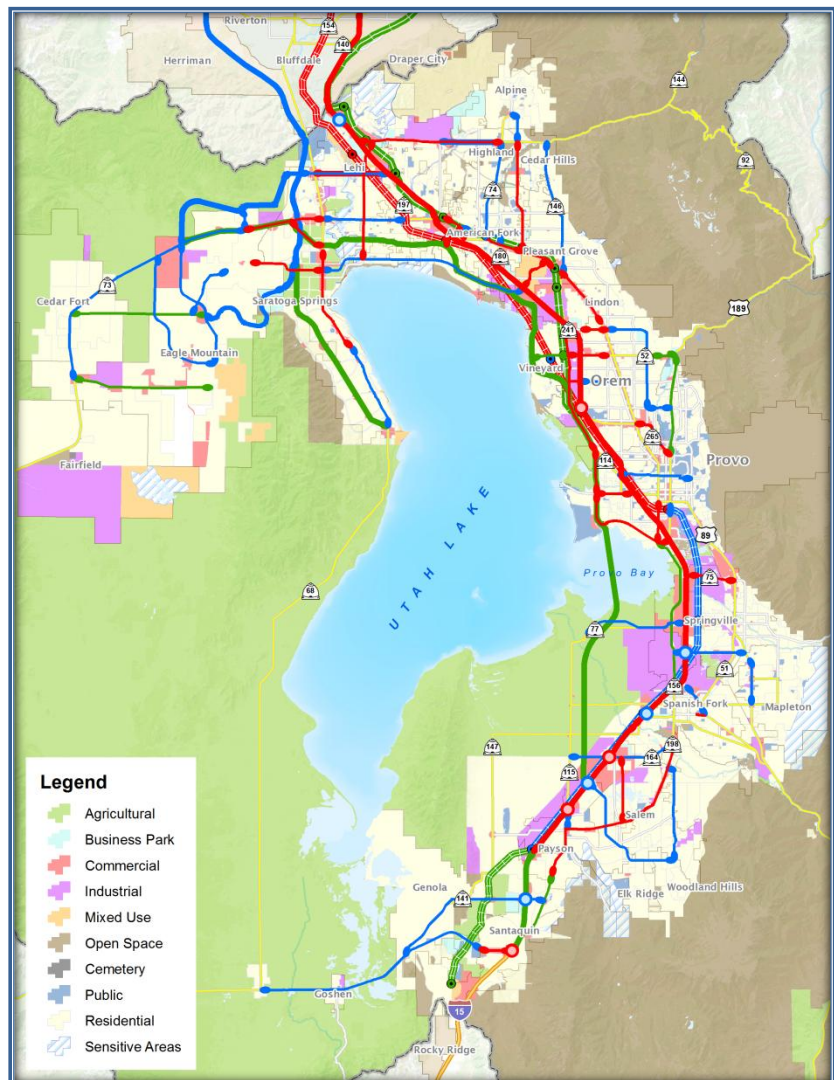
Each municipality and the county develop land use plans as part of the general plan process. These land use development patterns provide context for locating and modeling changes in socio-economic trends (population, households, and employment) that impact transportation demand.

## SOCIO-ECONOMIC GROWTH TRENDS

The Governor's Office of Planning and Budget (GOPB) forecasts Utah County's total population to double by 2040, to 1,092,450 (2.7% annual increase). Total employment follows a similar trend growing 97%, from 283,915 jobs to 560,058, or a 2.2% annual average rate of change.

For details on Land Use and Socio-Economic Growth see Appendix - Travel Demand

## GENERALIZED LAND USE MAP





# 2040 METROPOLITAN TRANSPORTATION PLAN

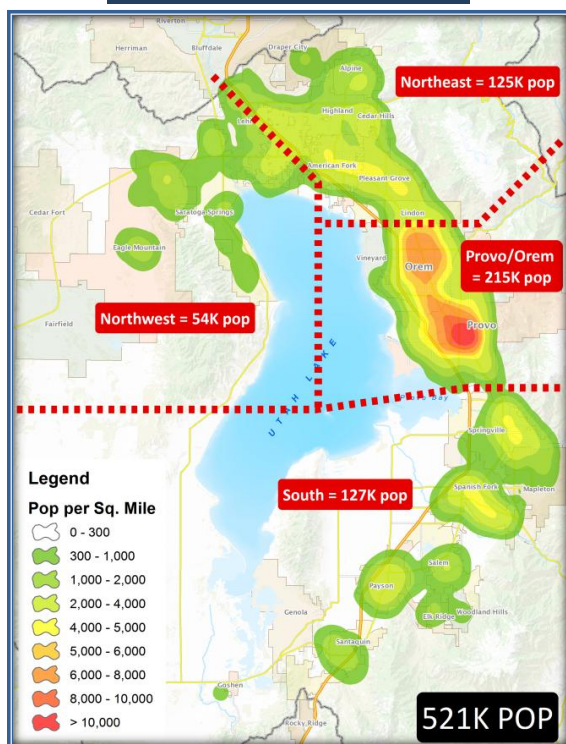
## SOCIO-ECONOMIC DISTRIBUTION

Population density in 2007 was centered in the Orem/Provo area. However, the highest growth over the last decade has been in northwest Utah County, particularly in Lehi, Saratoga Springs, and Eagle Mountain. Mainly attributed to a convergence of the Salt Lake City and Provo/Orem Metro areas, it is anticipated to continue to experience the highest growth into the foreseeable future. While population

Rural areas tend to have a very low jobs/households ratio and more urbanized areas a higher ratio.

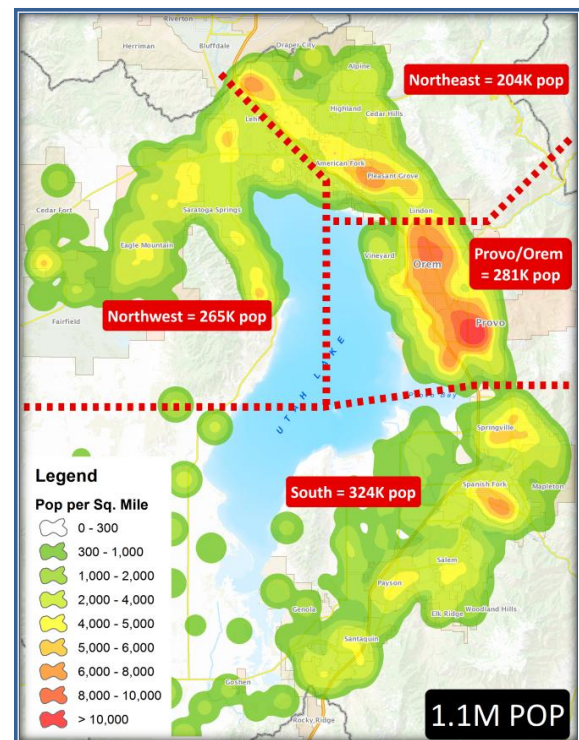
In 2007, the Orem/Provo area attracted the most work and non-work trips from all other areas of the county, reflective of a core urbanized area, with more than 2.4 jobs for every household. By 2040, changing patterns of urbanization will redistribute trip generation, but the Provo/Orem core will maintain the highest number of trip destinations.

## 2007 POPULATION DENSITY



increased in the southern county, densities still remain at rural levels with slowly expanding core areas. The Orem/Provo area will retain its core status as the population and employment center, but urbanization will spread northward along the I-15 freeway corridor.

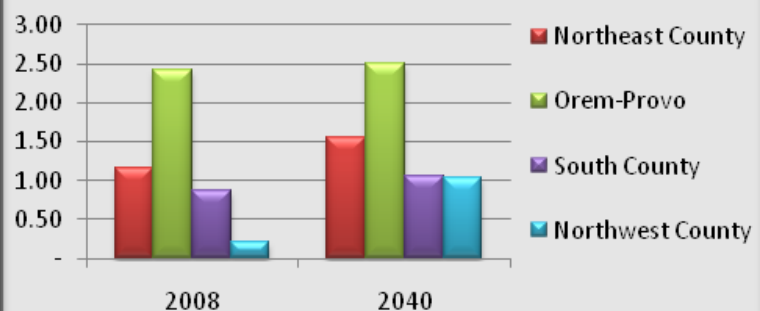
## 2040 POPULATION DENSITY



## TRIP GENERATION

One of the key components of trip generation in the travel demand model is the relative placement of the households to employment.

## JOBS PER HOUSEHOLD RATION



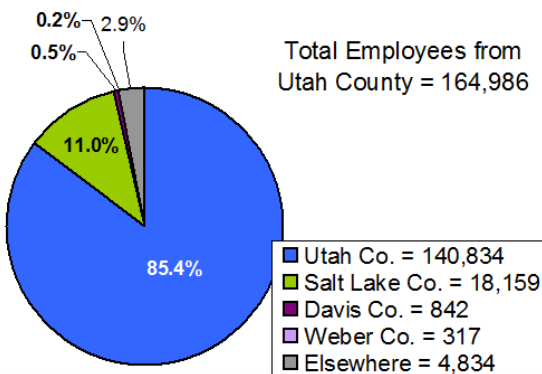
# 2040 METROPOLITAN TRANSPORTATION PLAN

## INTER-COUNTY COMMUTING

While the large majority of working residents are employed within county boundaries, a significant and growing number travel north to Salt Lake County. This northbound commute is and has always been larger than the reverse southbound commute, but both are growing and contributing to the increasing demands on I-15.

As a result of the population growth in north Utah County, the inter-county commute, and the linear configuration of urban development along I-15, the freeway will reach capacity and become congested by 2030, even with the current major reconstruction effort.

### Live in UTAH Co. and Work In:



## MODE SPLIT

Work trips by automobile (either drive alone or car pool) account for the vast majority of all work trips at 87%, and these trips place the highest demand on the transportation system. Increasing highway capacity to meet future demand will be both extremely expensive and reduces air quality. The MTP actively seeks to spread demand to other travel modes to help mitigate these negative impacts.

Projected mode split change come about as a result of:

- Improvements listed in the MTP
- Further urbanization and densification of the area
- Convergence of Utah and Salt Lake Counties
- Other socio-economic trends

## MODE SPLIT CENSUS 2000 DATA

| MODE                         | 2000 Percent |
|------------------------------|--------------|
| Drive Alone                  | 72.5%        |
| Car Pool                     | 14.9%        |
| Transit                      | 1.4%         |
| Walk                         | 4.9%         |
| Work at Home (Telecommuting) | 5%           |
| Other                        | 1.3%         |

## MODE SPLIT IRCAA 2030 DATA

| Mode                       | 2030 Percent |
|----------------------------|--------------|
| Drive Alone                | 62%          |
| Car Pool in I-15 HOV Lanes | 26%          |
| Transit                    | 12%          |

## LEVEL-OF-SERVICE

Highway Level-of-Service (LOS) is a determination of the comfort and convenience experienced by travelers. Elected officials in Utah County have adopted a policy for planning of a Level-of-Service D, a balance between convenience and cost in view of the funding available. The national standard is to plan for a LOS C.

|   |  |                                                                                                                                                          |
|---|--|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| A |  | <b>FREE FLOW:</b> Low volumes and no delays                                                                                                              |
| B |  | <b>STABLE FLOW:</b> Speeds restricted by travel conditions, minor delays                                                                                 |
| C |  | <b>STABLE FLOW:</b> Speeds and maneuverability closely controlled due to higher volumes                                                                  |
| D |  | <b>STABLE FLOW:</b> Speeds considerably affected by change in operation conditions. High density traffic restricts maneuverability, volume near capacity |
| E |  | <b>UNSTABLE FLOW:</b> Low speeds, considerable delay, volume at over slightly over capacity                                                              |
| F |  | <b>FORCED FLOW:</b> Very low speeds, volumes exceed capacity, long delays with stop-and-go traffic                                                       |

# 2040 METROPOLITAN TRANSPORTATION PLAN

## TRAVEL DEMAND MODEL OUTPUTS

Model outputs illustrate the expected changes to travel demand over the next 30 years, and highlight those facilities that are or will become problematic, and approximately when. The following maps show how existing and proposed facilities fare as growth continues.

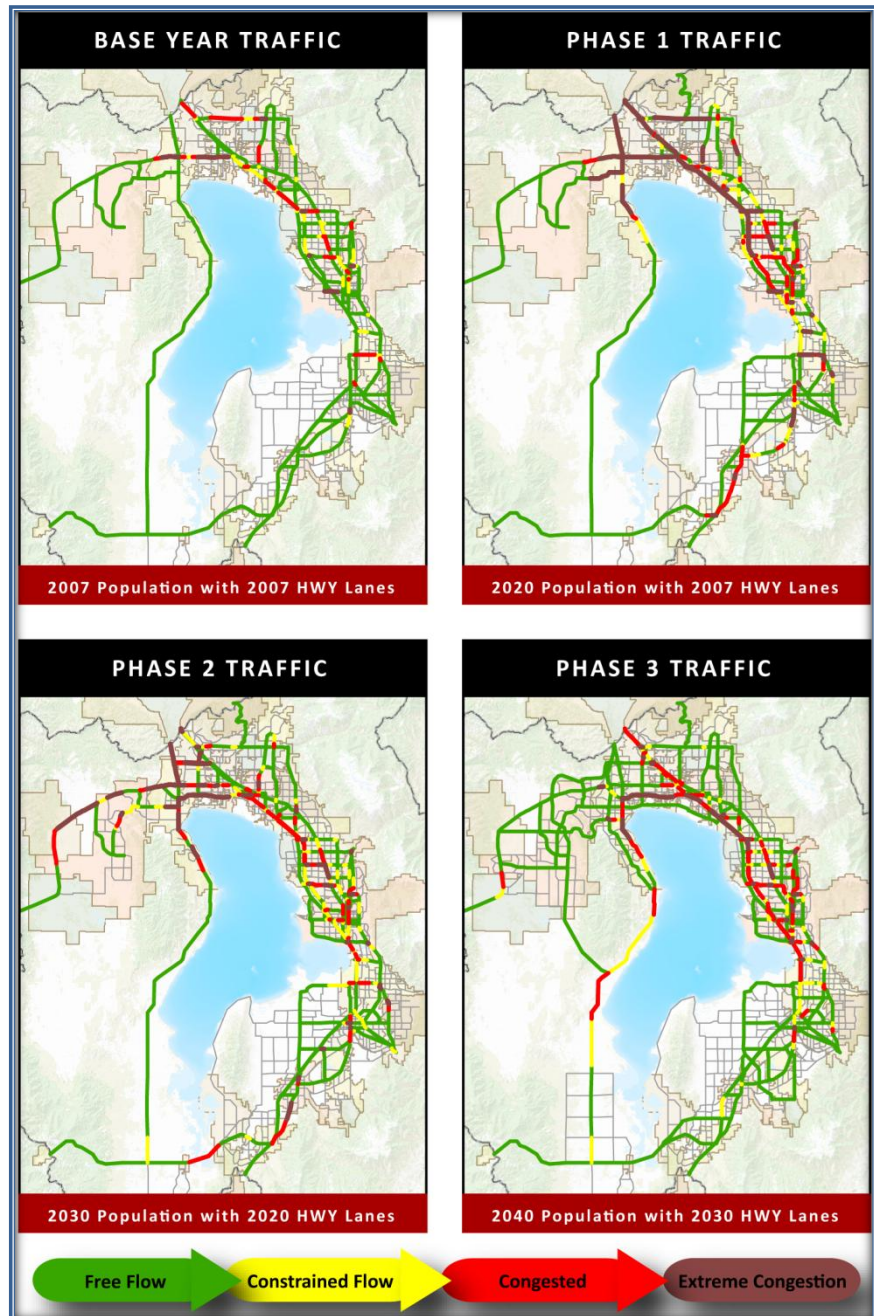
### FUTURE PROBLEMS

By 2040, I-15 freeway at 12 lanes is heavily congested and has reached capacity. Many major arterials in the north county are experiencing high congestion levels. Two prominent bottleneck areas in the county, Lindon and Springville, cannot function without reliever corridors. An expansion of major highway facilities in the county is needed.

To identify needed highway projects for the plan, projects from the previous MPO MTP, city master transportation plans, and transportation studies are considered.

Staff then runs the region travel demand computerized model to see if the demand is met. Phase 1 is run using the socio-economic data for 2020 (population, employment, households) compared to 2007 (The Base Year model network). This illustrates where congestion will be in 2020 if no improvements are made to the highway network. It also allows the MPO to visualize where needed highway projects should be planned. Projects are

### FUTURE TRAFFIC VOLUMES MAPS



proposed from the list mentioned above and the model is then run again for Phase One-2020, with the new projects added to see if the travel demand is met. This process is then repeated for each phase of the plan to 2040.



# 2040 METROPOLITAN TRANSPORTATION PLAN

Once the three phases of the plan are modeled and a draft listing of projects is created, MPO staff review the projects with each municipality, the county, and the Utah Department of Transportation gaining input on any needed changes. A major theme in the plan for this update was the need for additional large highway facilities by 2040.

## PROPOSED SOLUTIONS

A major goal of the MTP is to build a diverse, comprehensive, and multi-modal transportation system that serves the needs of all Utah County residents. Proposed Solutions are those improvements in roads, transit, and bike-pedestrian facilities that will continue to move us in that direction.

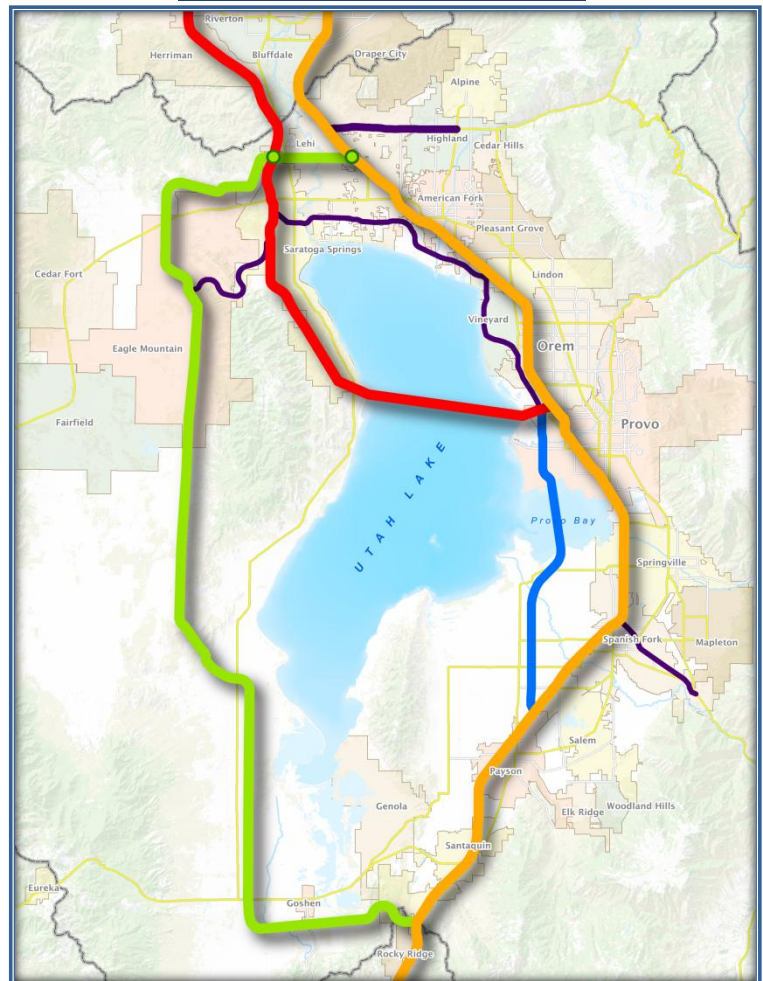
### ***PREFERRED FREEWAYS***

Congestion relief in all of the bottleneck areas is achieved by inclusion of the freeway preferred scenario projects, with all the modeled freeways carrying freeway levels of traffic by 2040.

- Lake Mountain Freeway - Mountain View Freeway Saratoga Springs via the north Cedar Pass alignment and east Eagle Mountain alignment south to Santaquin. (Green)
- Mountain View Freeway/Utah Lake Crossing - Continue Mountain View Freeway south through Saratoga Springs and across Utah Lake via a bridge connecting I-15 at about Provo 2000 North. (Red)
- Lehi 2100 North - Freeway connects I-15 to Mountain View Freeway (Green)
- South Wasatch Freeway - I-15 Payson to the Mountain View Freeway in Provo. (Blue)

- Vineyard Connector/Pioneer Crossing Expressway - Extends South Wasatch Freeway northward via proposed Vineyard Connector and becomes Pioneer Crossing. (Purple)
- Hidden Valley Expressway - Proposed southern corridor through the Cedar Pass area between Saratoga Springs. (Purple)
- Timpanogos Highway/SR-92 - Convert to an expressway (Purple)
- US-6 Spanish Fork - Convert to an expressway (Purple)

### ***FREEWAY PREFERRED SCENARIO***



# 2040 METROPOLITAN TRANSPORTATION PLAN

## ROADS AND HIGHWAY SELECTION

In addition to freeways, improvements to lesser arterials and collector ROADS ADDRESS other micro regional mobility needs, as continuing population expansion and commercial

development requires increased access and capacity. The Final List of Road Projects provides a comprehensive view of needed roadway improvements.

| HIGHWAY PROJECTS<br>Projects Not Ranked |                                                                                                                                                                            | Phase 1 | Phase 2 | Phase 3 | Vision | COST IN<br>MILLIONS |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|--------|---------------------|
| FREEWAY / EXPRESSWAY PROJECTS           |                                                                                                                                                                            |         |         |         |        |                     |
| 1                                       | <b>I-15 Freeway CORE Reconstruction - Lehi to Spanish Fork</b><br>Lehi Main Street to Spanish Fork River<br>Reconstruct freeway, interchanges, add capacity, Carpool Lanes |         |         |         |        | 1593.9              |
| 2                                       | <b>I-15 Freeway Reconstruction - Draper to Lehi</b><br>Draper to Lehi Main Street<br>Reconstruct freeway and interchanges, add capacity (cost UC portion)                  |         |         |         |        | 480.0               |
| 3                                       | <b>I-15 Freeway Widening - Spanish Fork to Payson</b><br>Spanish Fork River to Payson 800 South<br>Reconstruct freeway and interchanges, add capacity                      |         |         |         |        | 60.8                |
| 4                                       | <b>I-15 / Benjamin Interchange</b><br>Reconstruct interchange                                                                                                              |         |         |         |        | 48.7                |
| 5                                       | <b>I-15 / Orem 800 South Interchange</b><br>New HOV interchange connecting to Utah Valley University                                                                       |         |         |         |        | 124.1               |
| 6                                       | <b>I-15 / Payson Main Street Interchange</b><br>Reconstruct interchange                                                                                                    |         |         |         |        | 48.7                |
| 7                                       | <b>I-15 / Santaquin Main Street Interchange</b><br>Reconstruct interchange                                                                                                 |         |         |         |        | 36.5                |
| 8                                       | <b>Lehi 2100 North Frontage Roads</b><br>Redwood Road to I-15 Freeway<br>Phase 1 frontage roads with at grade intersections                                                |         |         |         |        | 120.6               |
| 9                                       | <b>Timpanogos Highway / SR-92 - Lehi to Highland</b><br>I-15 Freeway to Alpine Highway<br>Widen 2 lane sections to 4 lanes, add commuter lanes and trail                   |         |         |         |        | 143.6               |
| 10                                      | <b>Hidden Valley Expressway / Freeway</b><br>Mountain View Freeway, Saratoga Springs to Lake Mountain Expressway, Eagle Mountain                                           |         |         |         |        | 156.5               |
| 11                                      | <b>I-15 / Lehi 4000 North Interchange</b><br>New interchange                                                                                                               |         |         |         |        | 81.4                |
| 12                                      | <b>I-15 /Nebo Beltway Expressway Interchange - Payson</b><br>New interchange                                                                                               |         |         |         |        | 72.0                |
| 13                                      | <b>I-15 / Spanish Fork Center Street Interchange</b><br>New interchange                                                                                                    |         |         |         |        | 81.4                |
| 14                                      | <b>I-15 / Springville 1600 South/Sp Fork 2700 North Interchange</b><br>New interchange                                                                                     |         |         |         |        | 54.0                |
| 15                                      | <b>I-15 / Utah County 12400 South Interchange</b><br>New interchange between Payson and Santaquin                                                                          |         |         |         |        | 54.0                |
| 16                                      | <b>Lake Mountain Expressway - Eagle Mountain</b><br>SR-73 to Eagle Mountain Blvd<br>New 6 lane expressway through Eagle Mountain                                           |         |         |         |        | 114.6               |



# 2040 METROPOLITAN TRANSPORTATION PLAN

|    |                                                                                                                                                                               |         |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 17 | <b>Lake Mountain Freeway - Saratoga Springs to Eagle Mountain</b><br>Mountain View Freeway to SR-73<br>New freeway originating at Mountain View/Lehi 2100 N via Camp Williams | 666.3   |
| 18 | <b>Lehi 2100 North Expressway - Saratoga Springs to Lehi</b><br>Mountain View Freeway to I-15<br>New 6 lane Expressway with 4 lane frontage road system                       | 268.9   |
| 19 | <b>Mountain View Freeway - Salt Lake County to Saratoga Springs</b><br>I-80 Salt Lake County to Hidden Valley Freeway (cost Utah County portion)                              | 450.3   |
| 20 | <b>Nebo Beltway Expressway - Payson to Woodland Hills</b><br>I-15 Freeway to Woodland Hills Drive<br>Widen 2 lane portion to 4 and new 4 lane road                            | 82.4    |
| 21 | <b>Timpanogos HWY / SR-92 - Lehi to Highland</b><br>Lehi 1200 East to Alpine Highway, Highland<br>Add express lanes                                                           | 126.5   |
| 22 | <b>US-6 - Spanish Fork</b><br>I-15 to Spanish Fork Center Street<br>Widen to 6 lanes                                                                                          | 21.5    |
| 23 | <b>I-15 Freeway Widening - Payson to Santaquin</b><br>Payson 800 South to Santaquin Main Street<br>Widen freeway and interchanges                                             | 717.6   |
| 24 | <b>Mountain View Freeway (Foothill) - Saratoga Springs</b><br>Pony Express Parkway to Utah Lake Crossing<br>Continuation of Mountain View Freeway to south                    | 1,032.6 |
| 25 | <b>Pioneer Crossing/Vineyard Expressway</b><br>Mountain View Freeway, Saratoga Springs to South Wasatch Freeway, Provo<br>6 Lane Expressway                                   | 376.5   |
| 26 | <b>South Wasatch Freeway - Payson to Provo</b><br>I-15, Payson to Provo/Orem<br>New Freeway to bypass I-15 Springville Choke Point                                            | 1,786.1 |
| 27 | <b>Cedar Valley Freeway</b><br>Lake Mountain. Freeway, Eagle Mountain to I-15, Santaquin<br>New Freeway on westside of county                                                 | NA      |
| 28 | <b>Lake Mountain Expressway</b><br>Eagle Mountain Blvd to Cedar Valley Freeway<br>New 6 lane expressway through Eagle Mountain                                                | NA      |
| 29 | <b>Nebo Beltway Expressway</b><br>Woodland Hills to Spanish Fork<br>New loop road in southeast area of valley                                                                 | NA      |
| 30 | <b>I-15 Freeway Frontage Road System/Provo 820 North Interchange</b><br>Provo 900 South to Orem 800 South<br>Both facilities will be studied, one chosen                      | NA      |
| 31 | <b>Point of the Mountain Freeway - Lehi</b><br>I-15 to Mountain View Freeway<br>New Freeway connecting I-15 to Mountain. View Freeway                                         | NA      |
| 32 | <b>Utah Lake Crossing Freeway</b><br>Mountain View Freeway, Saratoga Springs to I-15, Provo/Orem<br>Opt. A - Proposed private crossing   Opt. B - MPO modeled alt.            | NA      |

# 2040 METROPOLITAN TRANSPORTATION PLAN

## PRINCIPLE HIGHWAY PROJECTS

|           |                                                                                                                                                    |       |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>33</b> | <b>Geneva Road / SR-114 - Orem</b><br>Orem 2000 South to Orem 1600 North<br>Widen to 4 lanes, add RR bridge at Orem 400 South                      | 113.9 |
| <b>34</b> | <b>Geneva Road / Pleasant Grove 100 East Connection</b><br>Connect roads at State Street<br>New 4 lane connector road                              | 5.7   |
| <b>35</b> | <b>SR-73 - Saratoga Springs to Eagle Mountain</b><br>Redwood Road to Ranches Parkway<br>Widen 2 lane portion to 4 lanes, add trail                 | 8.8   |
| <b>36</b> | <b>SR-198 - Spanish Fork to Payson</b><br>Arrowhead Trail to Payson 1500 South<br>Widen to 4 lanes                                                 | 75.6  |
| <b>37</b> | <b>North County Blvd (Utah County 4800 West)</b><br>SR-92 to State Street, American Fork<br>Widen 2 lane section to 4                              | 72.1  |
| <b>38</b> | <b>Orem 800 North / SR-52</b><br>Geneva Road to Orem 400 West<br>Widen to 6 lanes                                                                  | 12.7  |
| <b>39</b> | <b>Pioneer Crossing Extension - Saratoga Springs</b><br>Redwood Road to SR-73<br>New 4 lane road connecting Pioneering Crossing to SR-73           | 16.8  |
| <b>40</b> | <b>Pony Express Parkway - Saratoga Springs to Eagle Mountain</b><br>Redwood Road to Smith Ranch Road<br>Widen 2 lane portion to 4 lanes, add trail | 22.0  |
| <b>41</b> | <b>Provo 500 West</b><br>Provo 300 South to Westside Connector Road<br>Widen 2 lane portion to 4 and new 4 lane road, add bike lanes               | 12.1  |
| <b>42</b> | <b>Redwood Road / SR-68 - Saratoga Springs</b><br>Saratoga Springs 400 North to Stillwater Parkway<br>Widen to 4 lanes, add trail                  | 29.0  |
| <b>43</b> | <b>Santaquin Main Street / US-6</b><br>I-15 Freeway to Santaquin 500 West<br>Widen to 4 lanes, add trail                                           | 10.3  |
| <b>44</b> | <b>State Street / US-89 - Orem to Pleasant Grove</b><br>Orem 1800 North to Geneva Road, Pleasant Grove<br>Widen 4 lane portions to 6               | 6.2   |
| <b>45</b> | <b>State Street / US-89 - Pleasant Grove to American Fork</b><br>Pleasant Grove 200 South to American Fork 100 East<br>Widen to 6 lanes            | 26.7  |
| <b>46</b> | <b>State Street / US-89 - American Fork to Lehi</b><br>American Fork Main Street to Lehi Main Street<br>Widen to 6 lanes                           | 9.7   |
| <b>47</b> | <b>University Parkway / SR-265 - Orem to Provo</b><br>State Street, Orem to University Ave, Provo<br>Widen to 6 lanes                              | 34.1  |
| <b>48</b> | <b>Westside Connector Road</b><br>I-15 / University Ave interchange to Provo Center Street<br>New 4 lane road                                      | 28.7  |

# 2040 METROPOLITAN TRANSPORTATION PLAN

|    |                                                                                                                                                                                          |       |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 49 | <b>Arrowhead Trail / 8000 South - Spanish Fork to Salem</b><br>Spanish Fork Main Street to Utah County 3200 West<br>Widen to 4 lanes                                                     | 46.2  |
| 50 | <b>SR-73 - Eagle Mountain to Cedar Fort</b><br>Ranches Parkway to Eagle Mountain 3400 North<br>Widen to 4 lanes                                                                          | 134.5 |
| 51 | <b>Payson Main Street / SR-115</b><br>I-15 Freeway to Payson 100 North<br>Widen to 4 lanes                                                                                               | 8.3   |
| 52 | <b>Pleasant Grove 100 East / Canyon Road / SR-146</b><br>State Street, Pleasant Grove to SR-92, Highland<br>Widen to 4 lanes                                                             | 34.6  |
| 53 | <b>Pony Express Parkway - Eagle Mountain</b><br>Ruby Valley Drive to Eagle Mountain 2500 North<br>Widen 2 lane portion to 4 lanes, add trail                                             | 83.8  |
| 54 | <b>Pony Express Parkway - Saratoga Springs to Pleasant Grove</b><br>Redwood Road to I-15 / Pleasant Grove Interchange<br>Widen 2 lane portions to 4 lanes and new 4 lane road, add trail | 163.5 |
| 55 | <b>Provo 800 / 820 North / 700 North</b><br>Geneva Road to Provo 900 East<br>Widen to 4 lanes, add bike lanes                                                                            | 51.3  |
| 59 | <b>Redwood Road / SR-68 - Saratoga Springs</b><br>Stillwater Parkway to Mountain View Freeway<br>Widen to 4 lanes, add trail                                                             | 41.1  |
| 57 | <b>Springville 400 South / SR-77</b><br>I-15 Freeway to Palmyra<br>Widen to 4 lanes                                                                                                      | 45.1  |
| 58 | <b>University Ave / US-189 - Provo</b><br>Provo 900 South to 400 South<br>Reconstruct Provo 600 South RR bridge                                                                          | 54.0  |
| 59 | <b>US-6 - Santaquin to Elberta</b><br>Santaquin 500 West to Redwood Road, Elberta<br>Widen to 4 lanes                                                                                    | 53.2  |
| 60 | <b>US-89 - Mapleton</b><br>Mapleton 1200 North to Mapleton 1600 South<br>Widen to 4 lanes                                                                                                | 24.4  |
| 61 | <b>SR-73 - Saratoga Springs to Eagle Mountain</b><br>Mountain View Freeway to Lake Mountain Freeway<br>Widen to 6 lanes                                                                  | 108.0 |
| 62 | <b>SR-198 - Payson to Santaquin</b><br>Payson 1500 South to Santaquin Main Street<br>Widen to 4 lanes                                                                                    | 50.9  |
| 63 | <b>Orem 800 North / SR-52</b><br>Orem 1000 East to University Ave, Provo<br>Widen to 6 lanes, interchange improvements                                                                   | 73.3  |
| 64 | <b>Orem 800 North / SR-52</b><br>Geneva Road to Pioneer Crossing / Vineyard Expressway<br>New 6 lane road                                                                                | 25.7  |

# 2040 METROPOLITAN TRANSPORTATION PLAN

|                               |                                                                                                                                               |      |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------|
| 65                            | <b>University Ave - Provo</b><br>University Parkway to Orem 800 North<br>Widen to 6 lanes                                                     | 91.4 |
| <b>MINOR HIGHWAY PROJECTS</b> |                                                                                                                                               |      |
| 66                            | <b>Elk Ridge Drive - Salem</b><br>SR-198 to Utah County 8000 South<br>New 2 lane road                                                         | 9.7  |
| 67                            | <b>Lehi 2300 West</b><br>SR-92 to Pony Express Parkway<br>Widen 2 lane portion to 4 and new 4 lane road                                       | 78.0 |
| 68                            | <b>Meadows Connection Road</b><br>American Fork 200 South to State Street<br>New I-15 Freeway crossing to American Fork commuter rail station | 49.5 |
| 69                            | <b>Orem 1600 North</b><br>Orem 1200 West to Orem 400 West<br>Widen 2 lane portion to 4                                                        | 6.3  |
| 70                            | <b>Orem Center Street</b><br>Geneva Road to I-15 Freeway<br>Widen 2 lane portion to 4                                                         | 2.8  |
| 71                            | <b>Pleasant Grove Blvd</b><br>I-15 Freeway to State Street<br>Widen to 4 lanes                                                                | 10.9 |
| 72                            | <b>Provo Center Street / SR-114 - Provo</b><br>I-15 Freeway to Provo 3110 West<br>Widen to 4 lanes                                            | 11.5 |
| 73                            | <b>North West Connector Road - Provo</b><br>Westside Connector Road to Geneva Road<br>New 4 lane road                                         | 34.7 |
| 74                            | <b>Spanish Fork Center Street</b><br>Spanish Fork 900 East to US-6<br>Widen 2 lane portion to 4                                               | 1.6  |
| 75                            | <b>Springville 1400 North / SR-75</b><br>I-15 Freeway to Springville Main Street<br>Widen to 4 lanes                                          | 48.7 |
| 76                            | <b>American Fork 100 East   Alpine Highway / SR-74</b><br>American Fork Main Street to SR-92<br>Widen to 4 lanes, add bike lanes              | 43.0 |
| 77                            | <b>Canyon Crest Drive - Highland to Alpine</b><br>SR-92 to Alpine Highway<br>Widen to 4 lanes                                                 | 14.1 |
| 78                            | <b>Eagle Mountain Blvd</b><br>SR-73 to Lake Mountain Freeway<br>Widen to 4 lanes                                                              | 64.2 |
| 79                            | <b>Lehi Main Street / SR-73</b><br>Redwood Road to Lehi 500 West<br>Widen to 4 lanes                                                          | 53.3 |
| 80                            | <b>Orem 1600 North   800 East</b><br>Orem 400 West to Orem 800 South<br>Widen 2 lane portion to 4                                             | 51.4 |



# 2040 METROPOLITAN TRANSPORTATION PLAN

|    |                                                                                                                                                                                |       |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 81 | <b>Orem 800 South / Provo 3700 North</b><br>Orem 800 East to University Ave, Provo<br>Widen to 4 lanes                                                                         | 19.5  |
| 82 | <b>Orem Center Street</b><br>I-15 Freeway to State Street<br>Widen to 6 lanes                                                                                                  | 22.7  |
| 83 | <b>Pacific Ave Bypass Road - American Fork</b><br>State Street to American Fork 500 East to State Street<br>Widen to 4 lanes                                                   | 40.4  |
| 84 | <b>Ranches Parkway - Eagle Mountain</b><br>SR-73 to Lake Mountain Freeway<br>New 4 lane road                                                                                   | 11.7  |
| 85 | <b>Springville 1600 South / Spanish Fork 2700 North</b><br>Spanish Fork Main Street to US-89, Springville<br>Widen 2 lane portion to 4 and new 4 lane road, add RR bridge      | 92.8  |
| 86 | <b>Utah County 12400 South</b><br>SR-198, Santaquin to US-6, Genola<br>Widen to 4 lanes                                                                                        | 96.7  |
| 87 | <b>Woodland Hills Drive - Salem</b><br>SR-198 to Utah County 11200 South<br>Widen to 4 lanes                                                                                   | 40.9  |
| 88 | <b>Eagle Mountain 3400 North</b><br>SR-73 to Lake Mountain Freeway<br>New 4 lane road                                                                                          | 94.4  |
| 89 | <b>Eagle Mountain 5600 North</b><br>SR-73 to Lake Mountain Freeway<br>New 4 lane road                                                                                          | 95.6  |
| 90 | <b>Spanish Fork Main Street / Provo 500 West Connector Road</b><br>I-15 Freeway Spanish Fork to Provo Westside Connector Road<br>Widen 2 lane portion to 4 and new 4 lane road | 169.2 |

**I-15 CORE: MOVING THE  
SAM WHITE BRIDGE INTO  
PLACE ON I-15 IN  
APPROXIMATELY 8 HOURS**

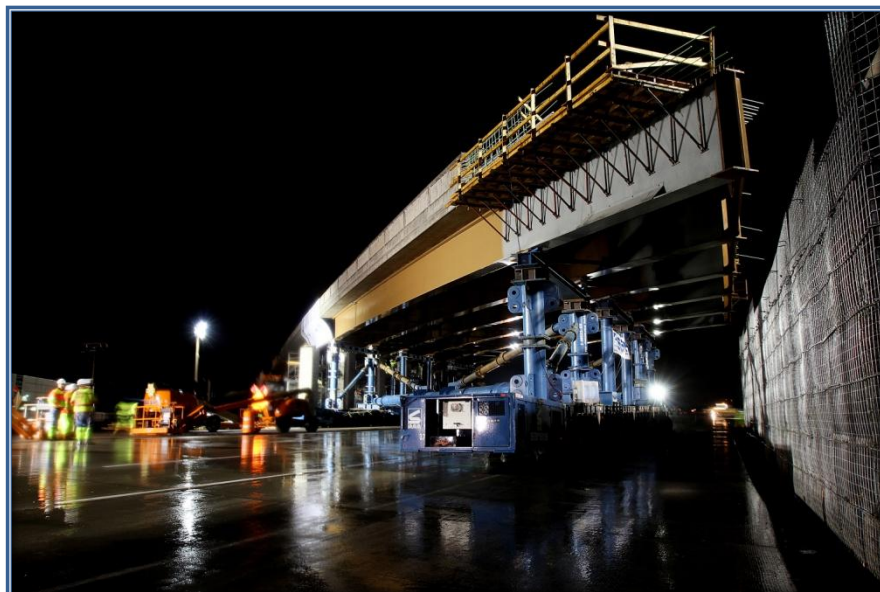
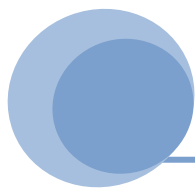


PHOTO COURTESY OF I-15 CORE / PRC



# 2040 METROPOLITAN TRANSPORTATION PLAN

## TRANSIT SELECTION

The transit portion of the MTP identifies strategic scenarios for the development of the public transit system in Utah County. This plan identifies mass transit needs for local communities as well as intercity travel between Utah County and the Salt Lake Valley within a thirty-year horizon. Transit Planning details are covered in Appendix - Transportation System Programs.

Projects are determined with the following goals:

- **Ridership:** Increase ridership at a rate greater than population growth.
- **Quality:** Provide transit service that is fast, frequent, and reliable
- **Productivity:** Increase transit ridership per unit of service.
- **Efficiency:** Reduce the cost per passenger by maximizing ridership and minimizing operating costs.
- **Access:** Maximize access to the transit system

It is expected that as population and employment grow, more areas of the county will have densities to support internal, circulating transit routes.

### KEY TRANSIT IMPROVEMENTS

#### **BUS RAPID TRANSIT**

Bus Rapid Transit (BRT) operates much like light rail with buses in designated bus lanes to avoid congestion and having traffic signal preemption to speed running times.

#### **PROVO-OREM BUS RAPID TRANSIT LINE**

This line is currently under study. Travel demands of residents and commuters in the study area are expected to exceed capacity of the existing transportation system in 2030. The needs result from:

- Increasing travel demand and insufficient roadway capacity
- Insufficient transit capacity
- Poor transit reliability and travel time
- Lack of high-quality alternatives to auto travel
- Lack of connectivity across I-15 and from I-15 to Orem and Provo



The Provo-Orem Bus Rapid Transit Project has completed an Environmental Assessment and is awaiting federal clearance.

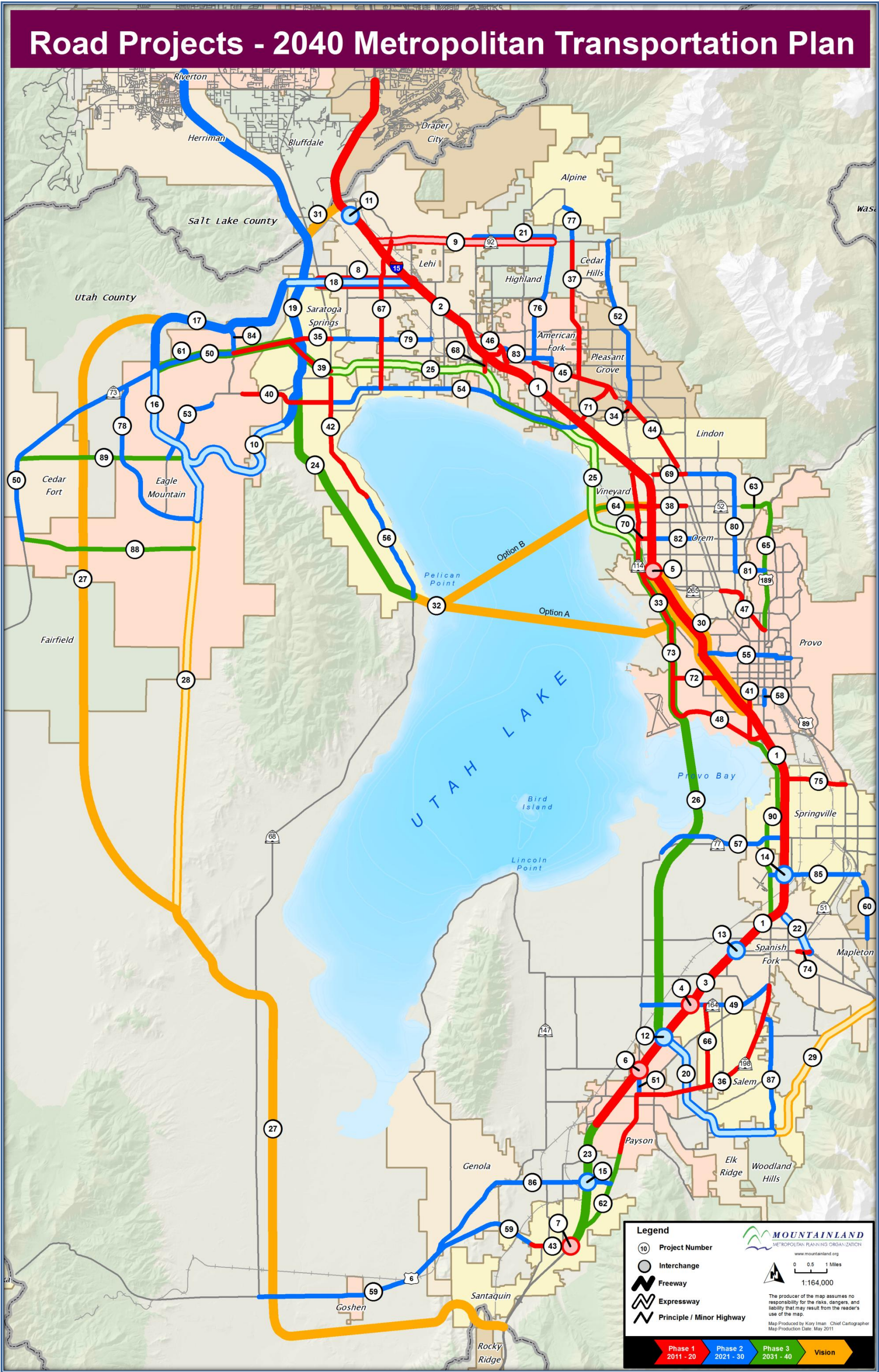
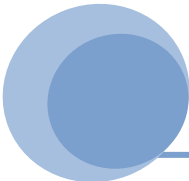
#### **OTHER PROPOSED BRT PROJECTS**

- Lehi to Lindon line
- Provo to Spanish Fork Line
- American Fork to Eagle Mountain Line
- Spanish Fork to Payson Line
- American Fork to Provo Line

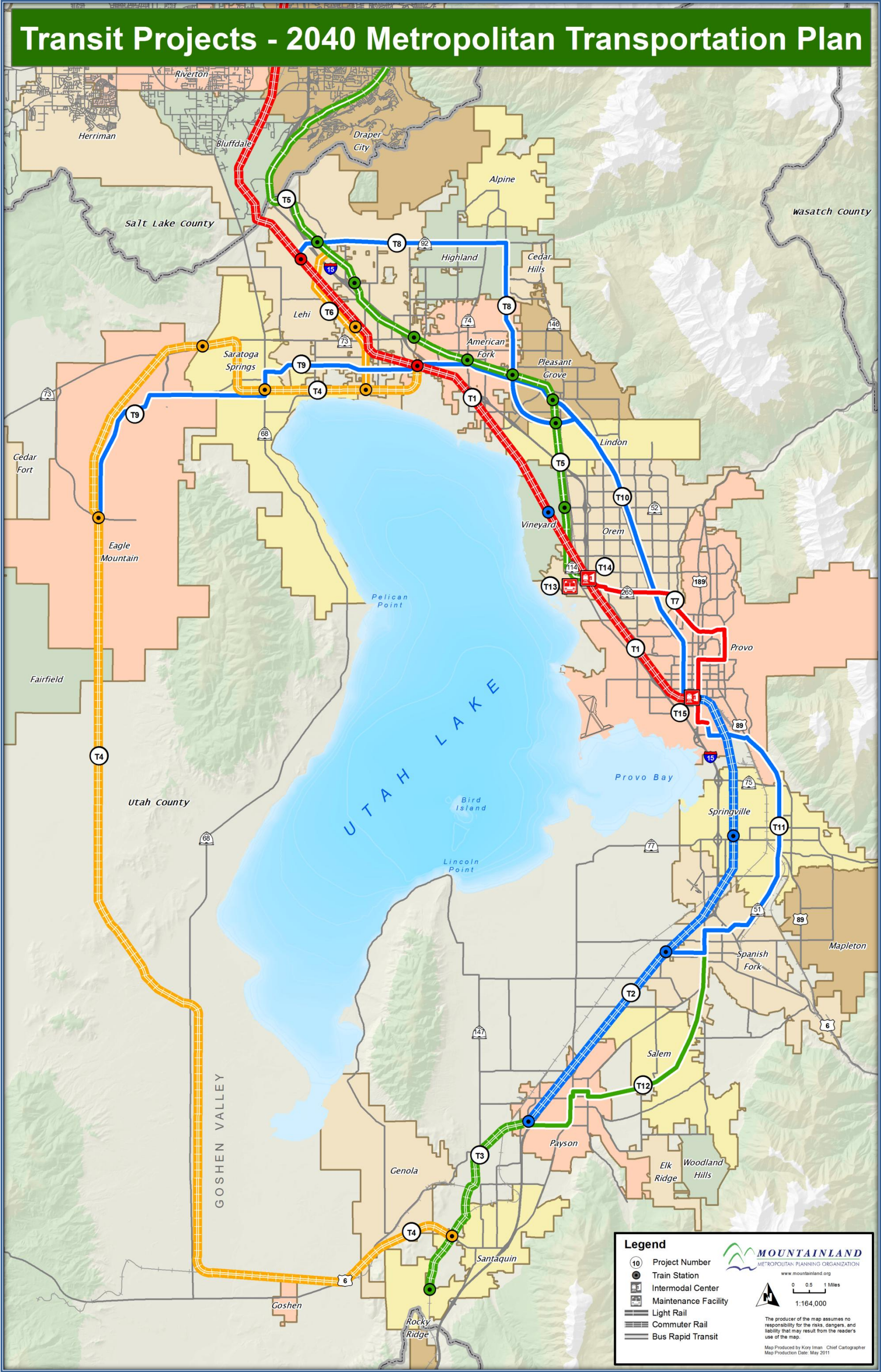
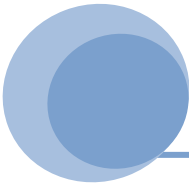
#### **BUS SERVICE**

A new bus network has been developed in partnership with UTA. Transit stations in various parts of the county connect localized routes to high frequency core routes along the I-15 corridor.











# 2040 METROPOLITAN TRANSPORTATION PLAN

Significant enhancements will be made through increased frequencies or headways on existing routes, adding reverse commute express routes, bus/HOV lanes on I-15 and additional high-capacity articulated buses. New park and ride facilities, commuter rail and light rail stations will increase both capacity and connectivity to local areas.

## **INTERMODAL CENTERS**

Intermodal centers are being constructed in Orem and Provo. UTA bus, commuter rail, Bus Rapid Transit, Amtrak, perhaps local taxi companies, Greyhound Bus Lines, and bus tour operators could service the centers. Adjoining park and ride lots, transit oriented development, mixed use development, and bicycle and pedestrian connections are planned.

## **LIGHT RAIL**

Commercial growth in North Utah County will make a 6.5 mile extension of light rail from the Salt Lake County line to the Orem Intermodal Center feasible. Anticipated operations would begin by approximately 2040.

Future Corridor for light rail would is shown as a vision project to extend through Lehi, Saratoga Springs, and Eagle Mountain. More study is needed to determine the location of this line and its timing.

## **COMMUTER RAIL**

A new 44 mile long commuter rail line connecting Salt Lake City to Provo is under construction. Operations are planned to begin in 2013.

The second phase of Commuter Rail would expand the line from Provo to Payson. A third phase would continue the line to Santaquin.

## **PARATRANSIT**

Paratransit offers transportation to persons who are prevented from using the fixed UTA routes available to the general public. Persons who are mentally, physically, or temporarily disabled may be eligible for the service. The future Paratransit system will need to implement if the following changes.

1. Replacement of worn out vans and older buses without wheelchair lift devices. All UTA regular service buses are wheelchair lift equipped.
2. Upgraded scheduling functions with a switch from manual to software based systems
3. Smaller wheelchair lift equipped vans for low-demand periods or trips that are removed from the central service area.

## **MOBILITY MANAGEMENT**

Improved coordination of transportation services for special needs individuals is needed. The numerous service providers work in relative isolation, provide duplicate service, or are inefficient. Recently formed local area coordinating councils in both Utah and Salt Lake County are working to integrate and coordinate services.

## **VISION SCENARIOS**

The Vision Scenario presents a plausible future based on principles of Smart Growth. Such outcomes are dependent on changes to local land use practices. While the MPO does not determine local practice, it does promote Smart Growth Principles as good planning practices.

**FRONTRUNNER SOUTH**





# 2040 METROPOLITAN TRANSPORTATION PLAN

## Transit PROJECTS

Projects Not Ranked

Phase 1

Phase 2

Phase 3

Vision

### COMMUTER RAIL PROJECTS

|           |                                                               |
|-----------|---------------------------------------------------------------|
| <b>T1</b> | <b>Salt Lake City to Provo Line</b>                           |
| <b>T2</b> | <b>Provo to Payson Line</b>                                   |
| <b>T3</b> | <b>Payson to Santaquin Line</b>                               |
| <b>T4</b> | <b>American Fork to Santaquin Line<br/>(via Cedar Valley)</b> |

### LIGHT RAIL PROJECTS

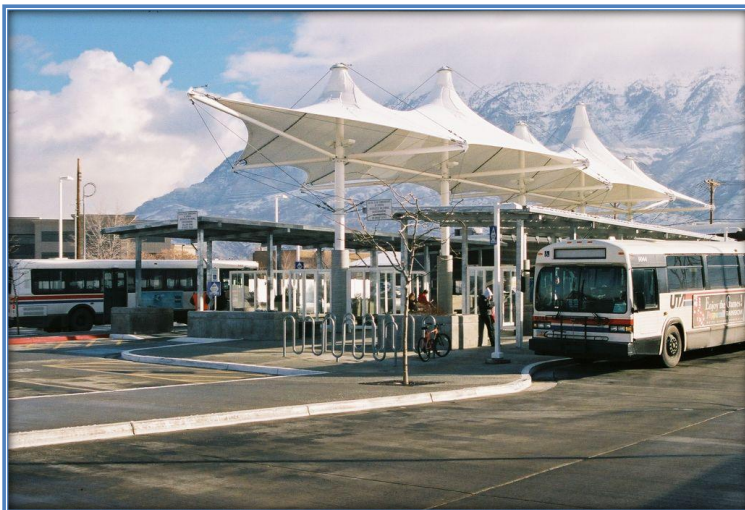
|           |                                    |
|-----------|------------------------------------|
| <b>T5</b> | <b>Draper to Orem Line</b>         |
| <b>T6</b> | <b>Lehi to Eagle Mountain Line</b> |

### ENHANCED BUS OR RAPID TRANSIT PROJECTS

|            |                                             |
|------------|---------------------------------------------|
| <b>T7</b>  | <b>Provo to Orem Line</b>                   |
| <b>T8</b>  | <b>Lehi to Lindon Line</b>                  |
| <b>T9</b>  | <b>American Fork to Eagle Mountain Line</b> |
| <b>T10</b> | <b>American Fork to Provo Line</b>          |
| <b>T11</b> | <b>Provo to Spanish Fork Line</b>           |
| <b>T12</b> | <b>Spanish Fork to Payson Line</b>          |

### OTHER TRANSIT PROJECTS

|            |                                           |
|------------|-------------------------------------------|
| <b>T13</b> | <b>Bus Maintenance Facility Expansion</b> |
| <b>T14</b> | <b>Orem Intermodal Center</b>             |
| <b>T15</b> | <b>Provo Intermodal Center</b>            |



OREM TRANSIT CENTER

UTA BUS WITH BIKE RACK



# 2040 METROPOLITAN TRANSPORTATION PLAN

## BICYCLE AND PEDESTRIAN IMPROVEMENTS

Utah County leaders have embraced non-motorized transportation as integral to improving air quality, reducing congestion, and reducing travel costs.

While major highway and transit facility construction consume the vast majority of transportation dollars, bicycle and pedestrian access are low-cost and low-impact improvements to a truly multi-modal transportation system. Initial construction

outlays, especially where facilities are included in the design and construction of highway projects, is very low, at less than 5% of project costs.



**COLLEGE CONNECTER TRAIL  
BESIDE UNIVERSITY PARKWAY**

The goal of the bicycle/pedestrian system is to reduce vehicle trips and mitigate traffic congestion. As Utah Valley continues to grow and urbanize, so the need and demand for multi-use paths, neighborhood connections, on-street bike lanes, sidewalks and pedestrian friendly development increases. Walking and biking are viable alternatives to driving for short trips, typically under two miles. For longer trips connections to transit are vital. The MTP identifies a network that connects population and employment centers to each other, based on projected densities through 2040.

The major impedance to implementing the region-wide, interconnected bike/ped system as envisioned in the MTP is funding. Estimated

costs to implement the MTP projects are nearly \$500 million over thirty years. While MAG and its partners have committed tens of millions of dollars to improvements, the \$16 million annual cost to create the needed system is beyond available funding sources. However, continued steady efforts at integration with roadway projects and proper use of available funds will make biking and walking increasingly viable over time.



**PROVO RIVER TRAIL AT  
RIVERWOODS OUTDOOR MALL**

Bike/Ped projects for the MTP are based largely on adopted municipal bike/ped plans and input from the Utah Valley Trails Committee is used to help close gaps between cities and determine which facilities are of a regional nature.



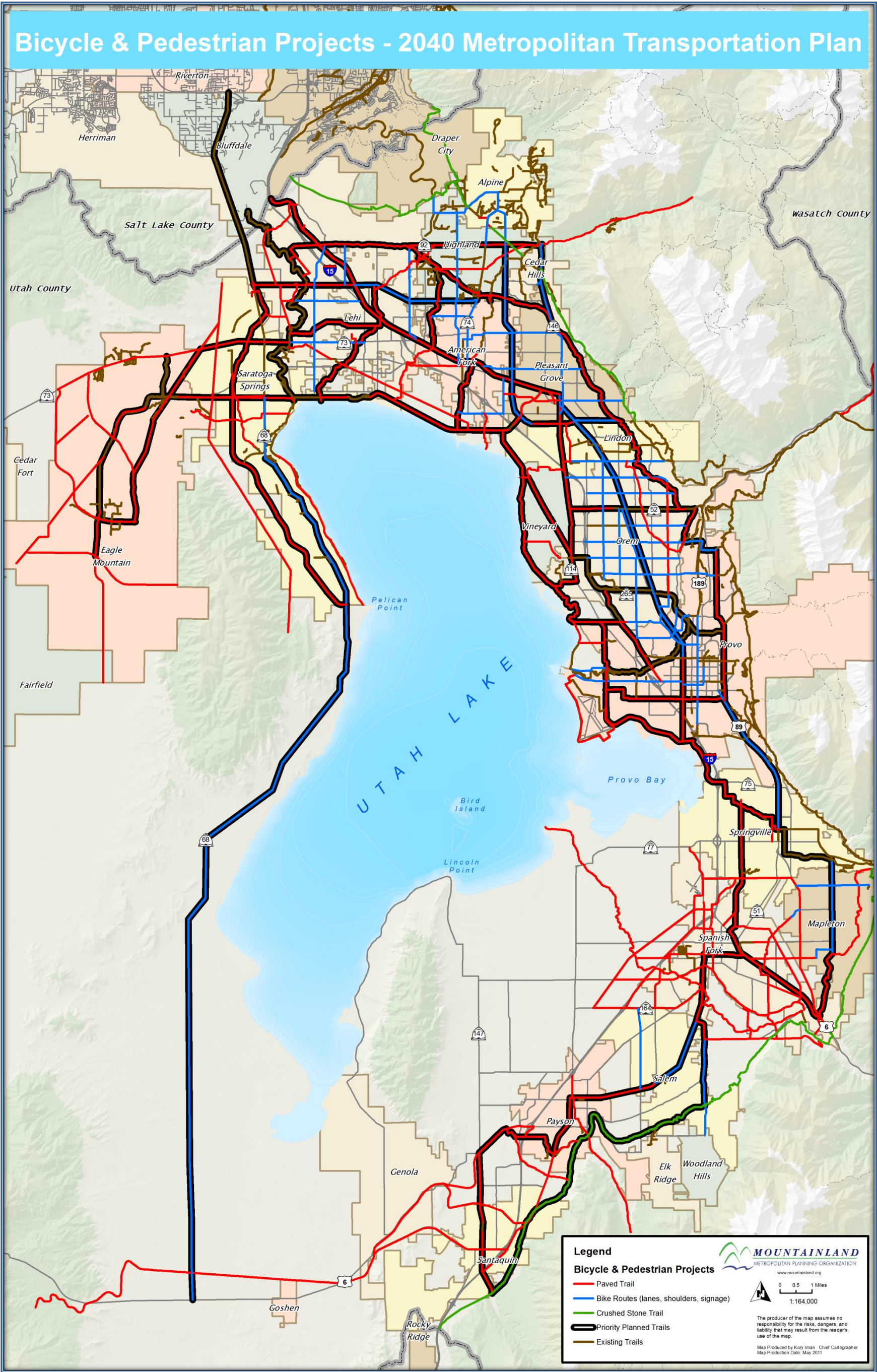
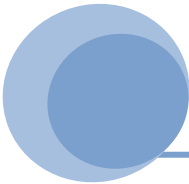
**SHARE THE ROAD**



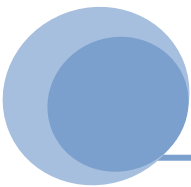
# 2040 METROPOLITAN TRANSPORTATION PLAN



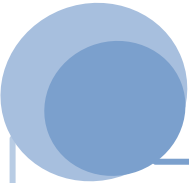








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# 2040 METROPOLITAN TRANSPORTATION PLAN

## FINANCIAL PLAN

How is this all paid for? The MTP includes a fiscally-constrained financial plan that provides adequate resources for plan implementation and system operation and maintenance over a 30 year time frame. This includes reasonably expected revenues from FHWA and FTA, state government, regional or local sources, the private sector, and user charges.

The MPO participates in an advanced planning practice called the Unified Transportation Plan, a state-wide coordination of all MPO and UDOT planning. This also provides each agency and the legislature with common funding assumptions based on a universal set of demographic, revenue, and cost estimating data.

Funding assumptions are for planning purposes only. They do not suggest endorsement of any particular tax nor are they intended to craft optimal tax policy. Rather, they are based on past federal and state practices, and include one-time appropriations or bonding scenarios that may or may not materialize, depending on the priorities of elected officials.

Maintenance and Operations of the system is shown to be underfunded, and will remain so unless additional funds are made available.

Vision Projects are those identified as needed beyond the 2040 planning horizon, and are not included in the financial plan.

## **MPO FUNDING POLICY**

Mountainland MPO transportation funding policy is:

- First grow the economy
- Second reallocation of existing funds
- Third entertain tax rate adjustments as a last resort.

## **SOURCES OF TRANSPORTATION**

### **FUNDS**

Transportation funds are generated from sales taxes, highway tolls, bonds, state, local, and federal excise taxes on various fuels, and credit assistance sources.

### **STATEWIDE 2040 FUNDING ASSUMPTIONS:**

- All figures are presented in future year dollar values at 4% annual inflation.
- Federal funds and programs increase at 2% per year.
- The B&C Roads program continues at 30% of total fuel tax revenue.
- By 2017, 100% of auto related sales tax will be dedicated to transportation. (Currently at 50%).
- A 5-cent increase in statewide fuel tax (or other equivalent) in 2014 and each decade after.
- A \$10 statewide increase in vehicle registration fees in 2018 and each decade after.

### **LOCAL 2040 FUNDING - PLANNING**

#### **ASSUMPTIONS:**

- A \$5 county increase in vehicle registration fees in 2018 and each decade after.
- Vehicle registrations grow at 2% per year.
- 1/4-cent sales tax in 2020 dedicated to transit.
- Local sales tax funds increase at 5.25-5.50% per year.
- Increased transit fares and advertising income.

### **BONDS**

Assume 4 percent interest rate with a 20 year retirement.

# 2040 METROPOLITAN TRANSPORTATION PLAN

## REVENUE

Revenue includes all planned funding resulting from the funding assumptions used in the plan which include statewide, local and bonding assumptions.

| <b>Planned Revenue</b><br>Funds in Millions Inflated to Planning Phase | <b>Planning Funds</b> | <b>Phase 1</b><br>2011-2020 | <b>Phase 2</b><br>2021-2030 | <b>Phase 3</b><br>2031-2040 |
|------------------------------------------------------------------------|-----------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>UDOT FACILITIES</b>                                                 |                       |                             |                             |                             |
| <b>HIGHWAY REVENUE</b>                                                 |                       |                             |                             |                             |
| New Capacity Projects                                                  | 6,837.1               | 616.3                       | 2,120.6                     | 4,100.2                     |
| Bond Revenue (less costs)                                              | 676.9                 | 166.3                       | 510.6                       | 0.0                         |
| Current Projects & Federal Earmarks                                    | 2,389.7               | 2,115.7                     | 127.0                       | 147.0                       |
| Preservation and Operations                                            | 2,368.1               | 556.4                       | 756.4                       | 1,055.3                     |
| <b>Total UDOT Revenue</b>                                              | <b>12,271.9</b>       | <b>3,454.7</b>              | <b>3,514.6</b>              | <b>5,302.5</b>              |
| <b>ALL REGIONAL FACILITIES</b>                                         |                       |                             |                             |                             |
| <b>HIGHWAY REVENUE</b>                                                 |                       |                             |                             |                             |
| MPO Federal Funds                                                      | 225.3                 | 60.8                        | 74.1                        | 90.4                        |
| 2nd 1/4-Cent Sales Tax (8% Roads / 92% Transit)                        | 80.5                  | 14.3                        | 24.4                        | 41.7                        |
| 3rd 1/4-Cent Sales Tax (70% Roads / 30% Transit)                       | 804.7                 | 143.0                       | 244.3                       | 417.3                       |
| \$10 Vehicle Registration (Started in 2008)                            | 141.2                 | 38.3                        | 46.5                        | 56.4                        |
| \$5 Vehicle Registration (2018 and every 10 years)                     | 225.6                 | 6.3                         | 53.8                        | 165.6                       |
| B & C Funds - 10%                                                      | 125.0                 | 23.4                        | 38.6                        | 63.0                        |
| Municipal General Fund Contributions - 10%                             | 188.2                 | 45.3                        | 60.9                        | 81.9                        |
| Developer / Private Funds                                              | 686.0                 | 165.3                       | 222.2                       | 298.6                       |
| <b>Total Regional Revenue</b>                                          | <b>2,476.4</b>        | <b>496.7</b>                | <b>764.8</b>                | <b>1,214.9</b>              |
| <b>Total Highway Planning Revenue</b>                                  | <b>14,748.3</b>       | <b>3,951.4</b>              | <b>4,279.4</b>              | <b>6,517.4</b>              |
| <b>UTA</b>                                                             |                       |                             |                             |                             |
| <b>TRANSIT REVENUE</b>                                                 |                       |                             |                             |                             |
| 1st 1/4-Cent Sales Tax (100% Transit)                                  | 829.4                 | 152.4                       | 253.7                       | 423.3                       |
| 2nd 1/4-Cent Sales Tax (8% Roads / 92% Transit)                        | 962.9                 | 176.9                       | 294.6                       | 491.4                       |
| 3rd 1/4-Cent Sales Tax (70% Roads / 30% Transit)                       | 50.0                  | 50.0                        | 0.0                         | 0.0                         |
| 4th 1/4-Cent Sales Tax (100% Transit)                                  | 550.1                 | 0.0                         | 206.2                       | 343.9                       |
| FTA New Starts Funds and Region Funds                                  | 1,781.8               | 234.0                       | 189.0                       | 1,358.8                     |
| Federal Formula Funds                                                  | 286.5                 | 59.7                        | 90.2                        | 136.6                       |
| Bond Revenue                                                           | 1,000.0               | 0.0                         | 0.0                         | 1,000.0                     |
| Fare Revenue                                                           | 1,011.2               | 105.9                       | 287.6                       | 617.7                       |
| Advertising Revenue                                                    | 25.6                  | 3.7                         | 8.2                         | 13.7                        |
| <b>Total Transit Planning Revenue</b>                                  | <b>6,497.5</b>        | <b>782.6</b>                | <b>1,329.5</b>              | <b>4,385.4</b>              |
| <b>Total Highway and Transit<br/>PLANNED REVENUE</b>                   | <b>21,245.8</b>       | <b>4,734.0</b>              | <b>5,608.9</b>              | <b>10,902.8</b>             |



# 2040 METROPOLITAN TRANSPORTATION PLAN

## EXPENDITURES

Expenditures include total costs of operation and maintenance plus proposed capacity improvements to the transportation system.

| <b>System Preservation/Operations</b><br>Funds in Millions to Planning Phase | <b>Planning<br/>Funds</b> | <b>Phase 1</b><br>2011-2020 | <b>Phase 2</b><br>2021-2030 | <b>Phase 3</b><br>2031-2040 |
|------------------------------------------------------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>HIGHWAY<br/>PRESERVATION/OPERATIONS</b>                                   |                           |                             |                             |                             |
| Bridge Preventive Maintenance                                                | 27.0                      | 9.0                         | 9.0                         | 9.0                         |
| Bridge Rehabilitation / Replacement                                          | 84.1                      | 15.9                        | 25.9                        | 42.3                        |
| Contractual Maintenance                                                      | 681.1                     | 128.9                       | 210.0                       | 342.1                       |
| Hazard Elimination, Safety, Enhancements                                     | 181.6                     | 34.4                        | 56.0                        | 91.2                        |
| Highway Rehabilitation / Replacement                                         | 81.6                      | 27.2                        | 27.2                        | 27.2                        |
| Operations                                                                   | 1,114.6                   | 300.8                       | 366.7                       | 447.0                       |
| Region / Department Contingencies                                            | 17.9                      | 6.0                         | 6.0                         | 6.0                         |
| Signals, Spot Improvement, Lighting, Barriers                                | 180.2                     | 34.1                        | 55.6                        | 90.5                        |
| <b>Total HWY Preservation/Operations</b>                                     | <b>2,368.1</b>            | <b>556.4</b>                | <b>756.4</b>                | <b>1,055.3</b>              |
| Unmet System HWY Preservation Needs                                          | 1,285.8                   | 243.4                       | 396.5                       | 645.9                       |
| <b>TRANSIT<br/>OPERATIONS/MAINTENANCE</b>                                    |                           |                             |                             |                             |
| Operations and Maintenance                                                   | 2,127.3                   | 253.4                       | 602.4                       | 1,271.5                     |
| <b>Total Transit Operations/Maintenance</b>                                  | <b>2,127.3</b>            | <b>253.4</b>                | <b>602.4</b>                | <b>1,271.5</b>              |
| <b>Total Highway and Transit<br/>PRESERVATION / OPERATIONS</b>               | <b>4,495.4</b>            | <b>809.8</b>                | <b>1,358.8</b>              | <b>2,326.8</b>              |

| <b>Transportation System Expansion</b><br>Funds in Millions to Planning Phase | <b>Planning<br/>Funds</b> | <b>Phase 1</b><br>2011-2020 | <b>Phase 2</b><br>2021-2030 | <b>Phase 3</b><br>2031-2040 |
|-------------------------------------------------------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>HIGHWAY<br/>EXPANSION PROJECTS</b>                                         |                           |                             |                             |                             |
| Freeway/Expressway Projects                                                   | 8,802.9                   | 2,656.9                     | 2,233.2                     | 3,912.8                     |
| Principal Highway Projects                                                    | 1,573.9                   | 484.5                       | 740.0                       | 349.4                       |
| Minor Highway Projects                                                        | 1,162.6                   | 253.7                       | 549.8                       | 359.1                       |
| <b>Total Highway Expansion Costs</b>                                          | <b>11,539.4</b>           | <b>3,395.0</b>              | <b>3,523.0</b>              | <b>4,621.3</b>              |
| <b>TRANSIT<br/>EXPANSION PROJECTS</b>                                         |                           |                             |                             |                             |
| Commuter Rail                                                                 | 1,280.2                   | 454.5                       | 495.0                       | 330.7                       |
| Light Rail                                                                    | 2,363.0                   | 0.0                         | 0.0                         | 2,363.0                     |
| Enhanced Bus or Rapid Transit                                                 | 401.2                     | 125.0                       | 235.0                       | 41.2                        |
| Bus Improvments and Other Costs                                               | 340.4                     | 91.8                        | 150.4                       | 98.2                        |
| <b>Total Transit Expansion Costs</b>                                          | <b>4,384.8</b>            | <b>671.3</b>                | <b>880.4</b>                | <b>2,833.1</b>              |
| <b>Total Highway and Transit<br/>EXPANSION PROJECTS</b>                       | <b>15,924.2</b>           | <b>4,066.3</b>              | <b>4,403.4</b>              | <b>7,454.4</b>              |

Financial details can be found in Appendix - Financial Plan.



# 2040 METROPOLITAN TRANSPORTATION PLAN

## IMPACTS AND BENEFITS

Road and transit projects in the Metropolitan Transportation Plan will have both positive and negative impacts to the social and physical environment of the region. For example, highway and transit improvements will reduce congestion, increase accessibility, result in fewer accidents, and improve air quality; however the construction or upgrading of highways may result in increased noise, relocation of residential or commercial properties, and the destruction of wetlands. The MTP attempts to maximize the positive benefits while minimizing the negative impacts of all projects. Projects that could have major impacts were identified so that project sponsors can address potential impacts as they develop their plans.

## **SUMMARY OF PRESENT CONDITIONS**

Most of the communities in Utah County have developed as rural, agriculturally based enclaves and most remain as low-density, suburban communities today. The 2010 GOPB projections estimate the MPO's current population to be 560,000. 2040 Utah County projections are estimated at 1.1 million, a doubling of our residents in 30 years. The growth of the county to date has had significant impact on the natural environment; the next 30 years of growth are predicated to have a similar level of impact.

## **PROJECTION OF CHANGE OR TRANSFORMATION**

365 acres of existing wetlands may be impacted, 73 projects may increase noise near residential neighborhoods, 59 projects may relocate residential or commercial businesses, 20 projects may impact existing agriculture protection easements, 3 projects may impact or disturb an existing EPA study

sites, and projects may impact 587 historic or public recreation areas etc.

The MPO encourages local government projects to mitigate these impacts by working with UDOT, US Army Corps of Engineers, Utah DWR, US fish and Wildlife, and the State Historic Preservation Officer to mitigate impacts in concert with projects established by these organization in high value locations such as: The 120 acre Lindon Wetland Mitigation Bank, Utah Historic Bridge Survey and the June Sucker Recovery Program near Provo.

## **CURRENT AND EMERGING ISSUES**

The MPO consults with federal, state and local agencies on the potential impacts of improvements called for in the MTP. The MPO compares its projects both individually and cumulatively with existing conservation plans as well as inventories of natural or historic resources. Both impacts and potential environmental mitigation activities are considered.

## **FORMAL CONSERVATION PLANS/ POTENTIAL ENVIRONMENTAL MITIGATION ACTIVITIES**

### ***JUNE SUCKER (FISH) RECOVERY***

The June Sucker Recovery Implementation Program is a multi-agency cooperative effort designed to coordinate and implement recovery actions for the endangered June sucker, found only in Utah Lake and its tributaries. The June Sucker Recovery Implementation Program has two main goals: Recover the June sucker to the extent that it no longer requires protection under the Endangered Species Act, and allow for the continued operation of existing water facilities and future water development of water resources for human use.

## UTAH HISTORIC BRIDGE SURVEY

The bridge survey guides UDOT's environmental staff and consultants in determining whether a bridge is eligible for listing on the National Register of Historic Places, and requires protection during a construction project. A "property," as a bridge or building is known, must generally be 50 years old, although UDOT uses 45 years as a cut-off date in order to accommodate the length of time between the completion of environmental documents and the beginning of construction. Second, a property must have historical integrity, meaning that the features that render it historically significant are still intact and visible. "Historical" integrity should not be confused with "functional" or "structural" integrity. And third, a property must be significant for its association with historic trends, important events or people, or noteworthy for its construction or design.

## LINDON WETLAND MITIGATION BANK

The U.S. Army Corps of Engineers regulates wetland activities with guidance from the Environmental Protection Agency and the U.S. Fish and Wildlife Service. These agencies, along with UDOT have created a 120 acre Mitigation Bank that serves UDOT projects in Northern Utah County.

The Northern Utah County Mitigation Bank (NUCMB) will eventually provide 75 wetland credits that will serve UDOT projects such as Pioneer Crossing, I-15 Core, and Geneva Road expansion. The credits provide a cost effective means of mitigating wetland impacts as well as an efficient permitting method that will accelerate the permitting process by at least one year for each project. Ultimately the NUCMB saves UDOT millions of dollars in mitigation costs as well as years in delays due to permitting requirements.

## UTAH LAKE WETLAND PRESERVE

The Utah Lake Wetland Preserve, a network of wetland and interspersed upland habitats near the southern end of Utah Lake, is being established to partially mitigate for past and anticipated impacts of Central Utah Project water development. The Preserve will provide habitat for wetland- and upland-dependent species and will ultimately be managed by the Utah Division of Wildlife Resources. The Preserve consists of Goshen Bay and Benjamin Slough.

## PLANNING AND ENVIRONMENT

### LINKAGES

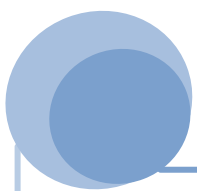
FHWA encourages an attempt to link this early environmental work (mentioned above) to the ultimate construction of the project through an initiative called Planning and Environment Linkages (PEL). This approach considers environmental, community, and economic goals early in the planning stage and carries them through project development, design, and construction. The goal of PEL is to create a seamless decision-making process that minimizes duplication of effort, promotes environmental stewardship, and reduces delays from planning to project implementation. PEL lays the foundation for a broad consensus on goals and priorities for transportation related processes.

### GOALS OF THE MPO PEL

The MPO Planning and Environmental Linkage efforts will concentrate on the following Goals:

- a. Create and maintain a Project File for each MTP Transportation Project from its inception. This documentation will explain the various activities including the public and resource management agency involvement that have occurred in the development of the project as part of the MPO planning process. The





# 2040 METROPOLITAN TRANSPORTATION PLAN

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goal is to document any planning-level information to NEPA standards so this information can be used as a foundation for the NEPA scoping process and appended or referenced in any future NEPA document.

- b. During MPO studies the consultant or MPO staff will document other alternatives considered and why they were not moved forward. The planning level screening and evaluation is similar to that done in NEPA in order to select the preferred alternative. A solutions evaluation and documents screening done in planning can be summarized and incorporated by reference into NEPA without a need for the alternatives study to be “redone.” This information is summarized in the “Project File.”
- c. Develop a “Planning Level Problem Statement” of Transportation Project during MPO studies in the development of the MTP. This will be carried it into MTP then into NEPA as the Purpose and Need. Time and energy spent during the MPO MTP development can be used to reduce time and energy at the beginning of NEPA on this task. This planning level Problem Statement captures in a clear and succinct format, information from planning that NEPA practitioners can incorporate into their purpose and need. All first Phase projects will have a Planning Level Problem Statement summarized on the Project Fact Sheet that also includes AADT by Phase, purpose need, study origin, sponsor, impacts benefits, typical cross section and any proposed bicycle pedestrian improvements.

highest value of the reinvestment. Projects that could have major impacts were identified so that sponsors can avoid, minimize, repair, restore, reduce over time, and account for the cost as they develop their plans.

## ***STRATEGIES TO IMPLEMENT PLAN***

### ***RECOMMENDATIONS***

Project fact sheets for all first phase projects will identify project impacts and provide a suggestion of potential environmental mitigation activities and potential areas to carry out these activities out. The project sponsor should be able to plan for and effectively mitigate any negative environmental impact of a project.

## ***SECTION RECOMMENDATION***

The impacts of these MTP projects need to be mitigated and coordinated to achieve the

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## **COMMUNITY IMPACTS AND BENEFITS**



### **NOISE IMPACTS**

Noise impacts vary based upon the characteristics of traffic, roadway/transit facility, and adjacent land uses. By shifting the highway alignment away from noise sensitive land uses, depressing the roadway, or installing noise barriers between the highway and the sensitive areas, adverse noise effects may be significantly reduced.



### **SCHOOL IMPACTS**

Transportation project impacts to school safety vary according to the nature of the new facility, the type of school involved, and the traffic exposure student pedestrian's encounter. This analysis is limited to identifying projects with immediate adjacent impacts (planned ROW intersects with school property) and road/transit projects within a half mile of an existing school center point of foot print.

Major 4-lane and above facilities carrying significant traffic volumes at relatively higher speeds could potentially affect school safety. Specific project impacts and mitigation measures should be identified in the environmental phase of the project's development. Potential mitigation measures may be identified during the specific project impact assessment phase and may include the provision of pedestrian overpasses and/or new busing areas.



### **LAND USE**

Local governments, such as counties and cities, are responsible for land use planning in Utah. Past practices in land use have resulted in low-

density urban development patterns in Utah Valley. Low-density development is most conveniently served by the automobile and less effectively served by mass transit modes.

Anticipated land use development impacts are primarily associated with new arterial facilities that will provide development access to adjacent property. Existing roads that will be upgraded to primary arterials and new roadway facilities will also have measurable impact on adjacent residential zoned land uses.



### **RELOCATION IMPACTS**

Neighborhood disruption and relocation impacts vary with each transportation project proposed. Relocation impacts are determined if insufficient right-of-way for the new project exist. Neighborhood disruption can also occur when homes, businesses, or community institutions are eliminated from the neighborhood or when the roadway becomes a barrier to neighborhood interaction.



### **VISUAL IMPACTS**

Visual impacts can occur when a transportation project is located in a particular scenic area, when a project is located on a steep grade, when cut and fill practices are employed or when a project is located in an important view shed area.

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## **ENVIRONMENT IMPACTS AND BENEFITS**



### **FARMLAND IMPACTS**

The farmland of Utah County has significance beyond its local boundaries. While most of the alfalfa and feed grains such as, winter wheat, and sweet corn are used locally, the specialty crops of apples, pears, and cherries find their way into national and international markets.

In addition, Utah County has designated "Agriculture protection areas" which means a geographic area is granted specific legal protection for the production of "crops, livestock, and livestock products" or devoted to an agency of the state or federal government.

Several projects in the MTP will impact these unique and prime farmlands as well as the agriculture protection areas. These impacts include use of farmland for rights-of-way and the division of large contiguous pieces of farmland into smaller uneconomically viable units.



### **GEOLOGIC HAZARDS**

#### **LIQUEFACTION, DEBRIS FLOW, AND FAULT LINES**

The Wasatch Fault runs the length of Utah County and highlights the geologic hazards in the area and the need to consider their potential impact on transportation facilities. Several geologic factors should be considered when planning a new highway project. Fault lines of known earthquake activity and its 1000' buffer, slope hazard or debris flow areas, and high potential liquefaction areas should be avoided. Safeguards may be implemented during the project's design phase to lessen the impact of these possible hazards.



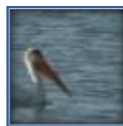
### **EPA STUDY SITES**

The potential for hazardous waste in project rights-of-way is a concern in the setting of transportation facilities, because the purchase of a contaminated site or the purchase of property split from a contaminated parcel may result in the public agency becoming financially liable for hazardous waste clean-up. The MTP compares the location of projects with the location of hazardous waste sites listed in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) and Leaking Underground Storage Tanks (LUST). CERCLIS is the database used by the EPA to track superfund progress at potential and confirmed hazardous waste sites.



### **BODIES OF WATER AND FLOODPLAIN MODIFICATION**

Highway projects can impact a water body or flood plain in many ways including: disturbing ground within 20 feet of natural or semi-natural rivers and streams, realigning or channeling meandering rivers and streams, placing obstructions in floodplains and realigning or channeling meandering rivers and streams, and constructing in unstable floodplain crossings.



### **WATER QUALITY IMPACTS**

Utah State's Non-point Source Management Plan, the federal Clean Water Act and various other governmental regulations require the monitoring of water resource impacts and management in the MPO area. Water quality impacts associated with roadway project vary according to traffic volumes, pavement width additions and the recharge capability of the surrounding soils.



## **WETLAND IMPACTS**

Wetlands serve critical environmental functions, including flood control, water purification and the provision of habitat for fish and wildlife. Wetlands generally include swamps, marshes, bogs, and similar areas.

The significance of roadway wetland impacts varies based upon the projects characteristics, the size and quality of the wetlands area, and the level to which the wetlands have already been disturbed by people. A project may generally impact wetlands by destroying the immediate footprint of the planned facility or by providing a barrier between adjacent wetland areas. The Utah Division of Wildlife Resources identified eight essential wetlands areas in Utah County:

- Utah Lake and associated wetland complexes (North Shore, Provo Bay, Skipper Bay, Goshen Bay, Benjamin Slough, etc.)
- Powell Slough WMA ownership conflicts
- Potential acquisitions within Utah Lake Wetland Preserve Boundary
- Isolated wetland complexes and wet meadows along east bench area
- Fairfield wetlands
- Holladay Spring
- American Fork Spring Complex (currently under construction for commercial development)
- Riparian areas along UDWR Priority Streams

### ***UTAH LAKE WETLAND PRESERVE, PART OF THE UTAH RECLAMATION MITIGATION AND CONSERVATION COMMISSION'S***

#### **CENTRAL UTAH WATER PROJECT**

Utah Lake, in Central Utah, is the largest naturally occurring freshwater lake in the western United States. Its wetlands have long been recognized locally and nationally for their

critical importance to fish and wildlife resources. The Utah Lake wetland ecosystem is important as a breeding area and stopover for many migratory birds in the Pacific Flyway. Approximately 226 species of birds are known to use Utah Lake wetlands, as well as 49 mammalian species, 16 species of amphibians and reptiles, and 18 species of fish. Utah Lake also provides feeding areas for birds nesting on the Great Salt Lake.

The Utah Lake Wetland Preserve, a network of wetland and interspersed upland habitats near the southern end of Utah Lake, is being established to partially mitigate for past and anticipated future impacts of Central Utah Project water development. The Preserve will provide habitat for wetland and upland-dependent species and will ultimately be managed by the Utah Division of Wildlife Resources. The Preserve consists of two units: Goshen Bay and Benjamin Slough. Special consideration should be given to avoidance, minimization or mitigation with the projects that intersect with this resource.

## **SECTION 4(F)**

Section 4(f) of the Department of Transportation Act of 1966, stipulated that the Federal Highway Administration and other Department of Transportation agencies cannot approve the use of land from a significant publicly owned public park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless there is no feasible and prudent alternative, and the action includes all possible planning to minimize harm to the property.



## **SECTION 4(F) HISTORIC**

Transit and roadway projects can negatively impact cultural resources by creating noise, vibration, the need to relocate, vandalism, physical impacts, and others. Positive impacts



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may also result by providing improved access to important community cultural resource.

Impacts to all cultural resources will be identified and mitigation measures determined during the environmental phase of project development. If unknown cultural resources are encountered during the project development/construction phase, appropriate investigation should take place. Reasonable efforts should be made to provide access and information to the site during construction. Such mitigation might, for example, include the placement of historical information markers, in addition to providing the standard documentation.



## **SECTION 4(F) PUBLIC PARKS/ RECREATION AREAS**

The Public Parks and Recreation Areas consists of the following: public parks, public recreation areas, public multiple-use land holdings, historic state parks, fairgrounds, school playgrounds, public golf courses, existing public non-motorized trails and future public trails of regional significance.

All existing and proposed trail facilities are or will be publicly owned; 4(F) facilities. Because trails make important non-motorized connections between major origins and destinations, it is essential that they exist as contiguous facilities. Highway and other transportation projects can adversely affect trails by interrupting existing or planned routes. Each of these projects should therefore provide for the continuity of both existing and planned trails with the incorporation of underpasses/overpasses or other appropriate connections.

In addition, the mountains east of the MPO area provide recreation and open space for the people of Utah County. The Uinta National Forest is a nationally recognized winter and summer recreation area for skiers and hikers; it contains three congressionally designated

wilderness areas of inspiring grandeur and is a source of water for the cities of the area. The MTP will need to minimize the impacts on these publicly owned recreational areas of significant value.



## **SECTION 6F PROPERTIES**

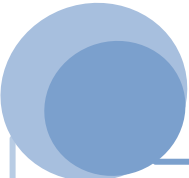
Project impacts to 6(F) projects are problematic and should be avoided. Land and water conservation funded properties acquired or developed under the federal land and water conservation fund program must be retained in public ownership for outdoor recreation use in perpetuity or replaced in both quantity and quality.



## **SECTION 4(F) WILDLIFE/WATERFOWL REFUGES**

The entire MPO area has been identified as important migratory waterfowl habitat described as the "Intermountain West Unit," by the U.S. Department of Interior in the 1994 update to the North American Waterfowl Management Plan. This plan's primary objective is to preserve habitat and increase duck, goose, and swan populations nationwide. Road and transit improvements should avoid or minimize any wetland or waterfowl habitat. In addition, sections of important farmland should be preserved to act as migratory rest and feeding areas.

The Utah Division of Wildlife Resources (UDWR) has also mapped the entire MPO area for Fish, Birds and Mammal important habitat. Primary areas of concern with this mapped habitat are the bench or foothill locations, riparian or wetlands and water bodies. Foothills occur where the urbanized area meets the Uinta National Forest in the eastern edge of the MPO area. These sagebrush and scrub oak covered hills provide critical habitat for the mule deer, elk, mink, snowshoe hare, rocky mountain big



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horn sheep, both for winter range as well as year round habitat.

Several species of birds such as California Quail, Ring Neck Pheasant, Ruffed Grouse, Sage Grouse use the foothill area for yearlong habitat, including brooding habitat. California Quail, Ring Neck Pheasant also have critical habitat in the valley locations that intersects with most road and transit projects.

Important fisheries in the MPO area are the upper portion of the Spanish Fork River, the entire stretch of the Provo and Jordan Rivers, portions of Hobbie Creek near Springville, portions of the American Fork River, and Utah Lake. Selected species include the June Sucker, Utah Chud and the Bonneville Cutthroat Trout. The road and transit projects that intersect major naturally occurring rivers, streams and water bodies impact fishery and aquatic habitat.

Several threatened and endanger species, both flora and fauna, exist within the MPO area. Coordination with the U.S. Fish and Wild Life Service February 2011 determined the presence of the following threatened and/or endangered species In Utah County.

For more detail of how the MTP projects are affected by the various impacts and benefits, see the Appendix - Impacts and Benefits

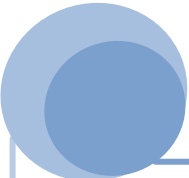
## **CLIMATE CHANGE**

The USDOT's Transportation and Climate Change clearing house states that the prospect of global climate change has become a major policy issue during the last decade. The transportation sector is currently responsible for approximately 28 percent of greenhouse gas emissions in the United States and is expected to be one of the fastest growing sources of greenhouse gas emissions in the foreseeable future, due to increased demand for motor gasoline, jet fuel, and diesel fuel.

In May 1999, the USDOT established the Center for Climate Change and Environmental Forecasting to play a leadership role in meeting these challenges. The Center promotes comprehensive multimodal approaches to reduce GHG emissions and prepare for the effects of climate change on the transportation system, while advancing USDOT's core goals of safety, mobility, environmental stewardship, and security.

Federal Highway Administration has four primary strategies to reduce Green House Gas (GHG) emissions from transportation. To be most effective, all four must be pursued together.

1. **Improve system and operational efficiencies:** Traffic flow improvements can be achieved through intelligent transportation systems, route optimization, congestion pricing, and improved intermodal links and system connectivity. Other improvements, such as auxiliary power units and truck stop electrification systems allow long-haul trucks to run air conditioning/heating and electrical appliances without having to idle their vehicles during rest periods, saving fuel and reducing emissions.
2. **Reduce growth of vehicle miles traveled:** Land use strategies that concentrate development reduces driving. Providing HOV lanes, transit options, pedestrian and bicycle facilities, and promoting travel demand management such as telecommuting reduces the number of vehicle trips. Pricing mechanisms such as road pricing, mileage-based car insurance, and gas taxes can motivate people to drive less.
3. **Transition to lower GHG fuels:** Replace gasoline and diesel with fuels such as biodiesel and natural gas which produce fewer GHGs over their lifecycle.



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4. **Improve vehicle technologies:** Promote the development of more fuel efficient vehicles, such as plug-in electric hybrids, via policy decisions, such as stringent Corporate Average Fuel Economy (CAFE) standards. Tax credit programs and "feebates" can also encourage the purchase of more fuel efficient vehicles.

The Federal Transit Administration states that public transportation can reduce greenhouse gas emissions by:

- Providing a low emissions alternative to driving.
- Facilitating compact land use, reducing the need to travel long distances.
- Minimizing the carbon footprint of transit operations and construction.

While the term "Climate Change" remains a controversial political subject for many of our elected officials the MPO and the State of Utah do promote many strategies that reduce GHG type emissions including:

1. Investing approximately 20% of the \$19 billion 2040 MTP budget in Transit related capital projects, maintenance and operation.
2. Promoting adoption of compact land use policies in the Wasatch Choices for 2040 Vision Plan. More compact land use will save billions of dollars in infrastructure and transportation costs, improves air quality and reduces GHG emissions, and fosters continued economic growth.
3. Investing in the expansion of the High Occupancy Vehicle Lane on I-15 and Intelligent Transportation Systems along major arterials to improve capacity and reduce stop and go traffic.
4. The State of Utah provides credit for 35% of the purchase price of alternative fuel vehicles (up to \$2,500) and issues a Clean Air license plate (or "C" plate) to qualifying vehicles. The "C" plate allows owners to

drive in the HOV lane and to park for free in downtown Salt Lake City.

This community and environmental impact assessment is not complete environmental review for the project proposed, but it is a general indicator of potential problems. Early identification of problem areas should aid in the design phase of project development and help alleviate the costs associated with problematic alignments of corridors that could be adjusted in this early planning stage.

Higher density development is a major theme of the Wasatch Choices 2040, a voluntary and cooperative land use planning exercise intended to illustrate the impacts of current practices and identify alternative choices in land use. The MPO has participated in this effort and supports the adoption of land use policies that reduce the need for new facilities and subsequent societal and environmental impacts.

For more detail of how the MTP projects are affected by the various impacts and benefits, see the Appendix - Impacts and Benefits.

## ENVIRONMENT JUSTICE / TITLE VI

Environmental Justice is fair treatment and meaningful involvement of all people regardless of race, color, national origin, age or income with respect to the development, implementation, and enforcement of environmental laws. Environmental justice seeks to ensure that minority and low-income communities have access to public information relating to human health and environmental planning regulations and enforcement. It ensures that no population, especially the elderly and children, are forced to shoulder a disproportionate burden of the negative human health and environmental impacts of pollution or other environmental hazard. (U.S. EPA Department of Environmental Justice)

There are four fundamental environmental justice principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.
4. To certify compliance with Title VI and address environmental justice, MPOs need to:
  - a. Enhance their analytical capabilities to ensure that the long-range transportation plan and the transportation improvement program (TIP) comply with Title VI.
  - b. Identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed.

- c. Evaluate and - where necessary - improve their public involvement processes to eliminate participation barriers and engage minority and low-income populations in transportation decision-making.

### **MINORITY, LOW-INCOME, DISABLE, AND ELDERLY POPULATIONS**

None of the analyzed populations will receive a disproportionate benefit or negative impact of the planned proposed transportation projects. Some populations may visually appear on the maps to be concentrated in the more rural area of the MPO; however that may be attributed to the large geographic size of the rural census blocks/TAZ in those areas. To analyze this, MAG looked at the census block groups within the county that had a higher than average population of minorities, low-income, disabled and elderly populations, and mapped locations that specifically cater to these demographics such as churches, community centers, shopping, government offices, and others common travel destinations. Compared travel times from the census blocks to the travel destinations were not significantly increased for any of these groups after the construction of the planned projects.

### **MINORITY GROUPS**

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin. The MPO area includes minority groups and persons identifying themselves as:

- *Black* - a person having origins in any of the black racial groups of Africa.
- *Hispanic* - a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.



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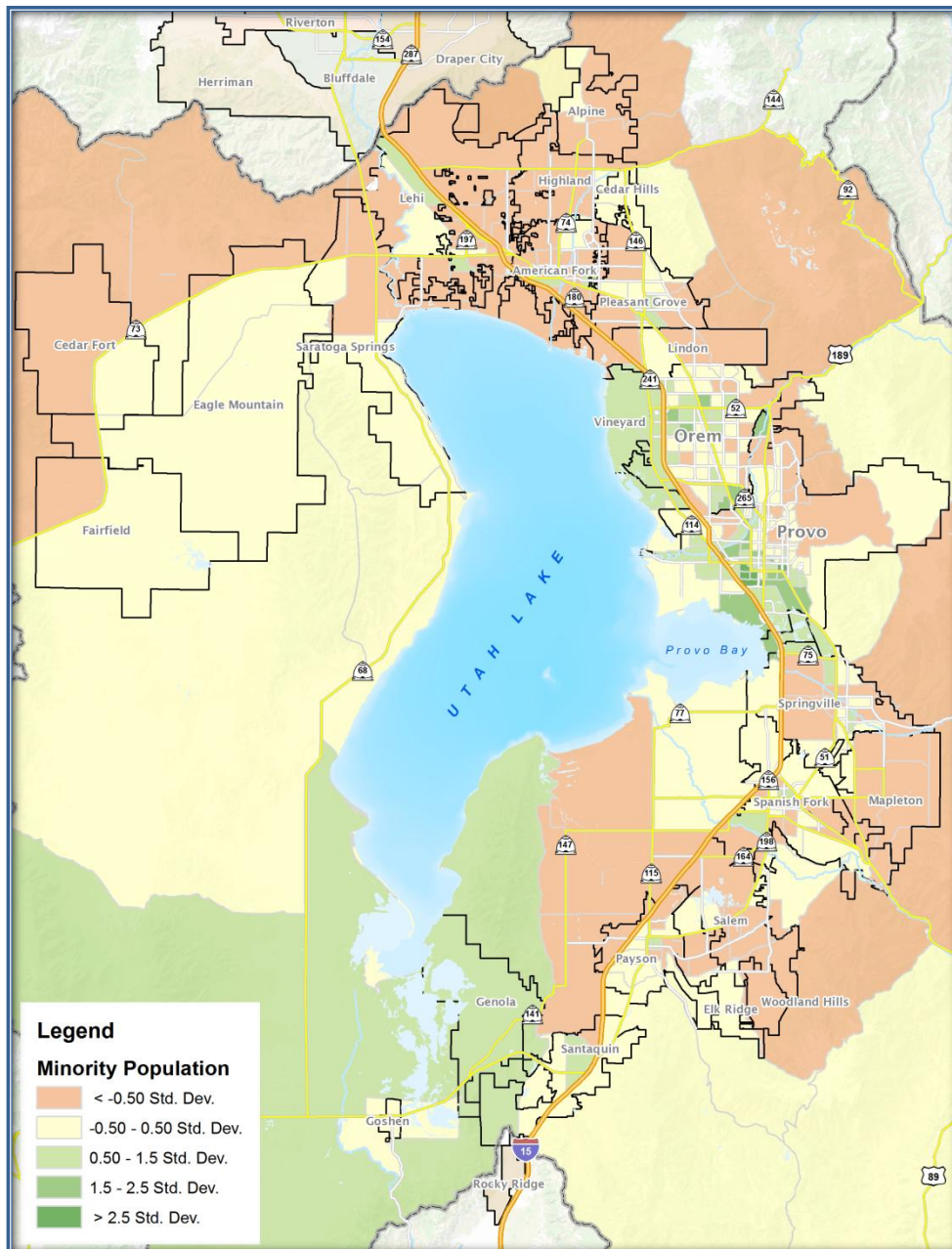
- *Asian* - a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.
- *American Indian and Alaskan Native* - a person having origins in any of the original people of North America and who maintains cultural identification

through tribal affiliation or community recognition.

Utah County's minority population of 41,965 is approximately 11.5% of the total population. The minority population in Utah County appears to cluster in the Provo / Orem / Vineyard area. Due to the

distribution of this population and the planned projects in that area and other areas the effects of the projects on the minority populations does not appear to be significantly greater than the projected impacts on the area's population in general.

**MINORITY GROUPS MAP**



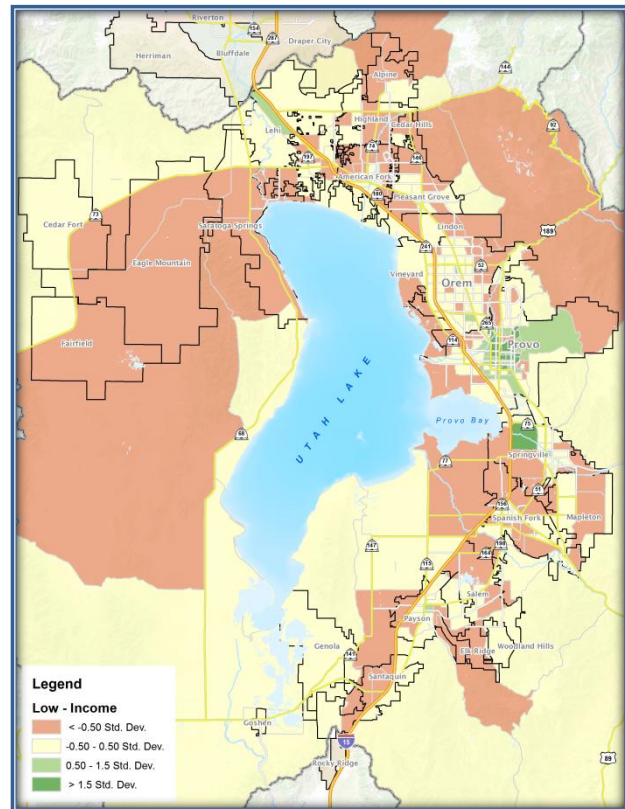
# 2040 METROPOLITAN TRANSPORTATION PLAN

## LOW-INCOME GROUPS

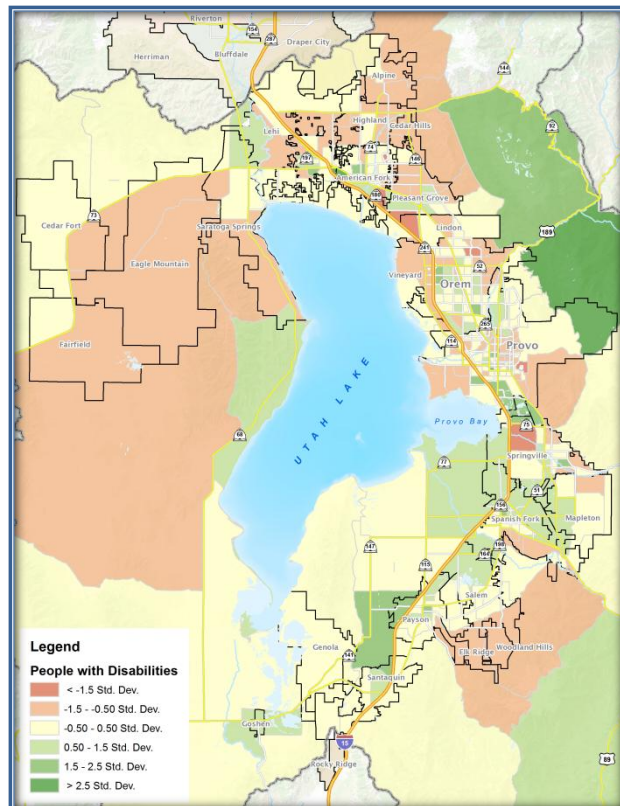
Low-Income residents with a 4 person household annual income of less than \$17,050 in the 2000 Census were used as an impact indicator as specified by the U.S. Department of Health and Human Services 2000 poverty guidelines. 12% or 43,270 of all individuals are reported at or below the poverty thresholds. The Low-Income population in Utah County appears to cluster in the Provo BYU area. Due to the distribution of this population and the planned projects in that area and other areas the effects of the projects on the minority populations does not appear to be significantly greater than the projected impacts on the area's population in general.

The Low-Income Group Map illustrates Low-Income Populations mapped by one standard deviation in intensity greater than the region average of 12%.

## LOW-INCOME GROUPS



## PERSONS WITH DISABILITIES MAP



## PERSONS WITH DISABILITIES

People with disabilities are described in the 2000 Census data as non-institutionalized resident's with mobility limitations, age 5 years and older. Based on 2000 Census information, 38,248 people, or 11.7% of the total MPO area's population, were considered disabled with various kinds of limitations. The disabled population appears to be evenly distributed throughout the MPO. The Regional Plan projects impacts and benefits do not appear to be significantly greater upon the disabled population than that on the area's population in general.

The Persons with Disabilities Map illustrates disabled populations mapped by one standard deviation in intensity greater than the region average of 11.7%.



# 2040 METROPOLITAN TRANSPORTATION PLAN

## ***PERSONS OVER 65***

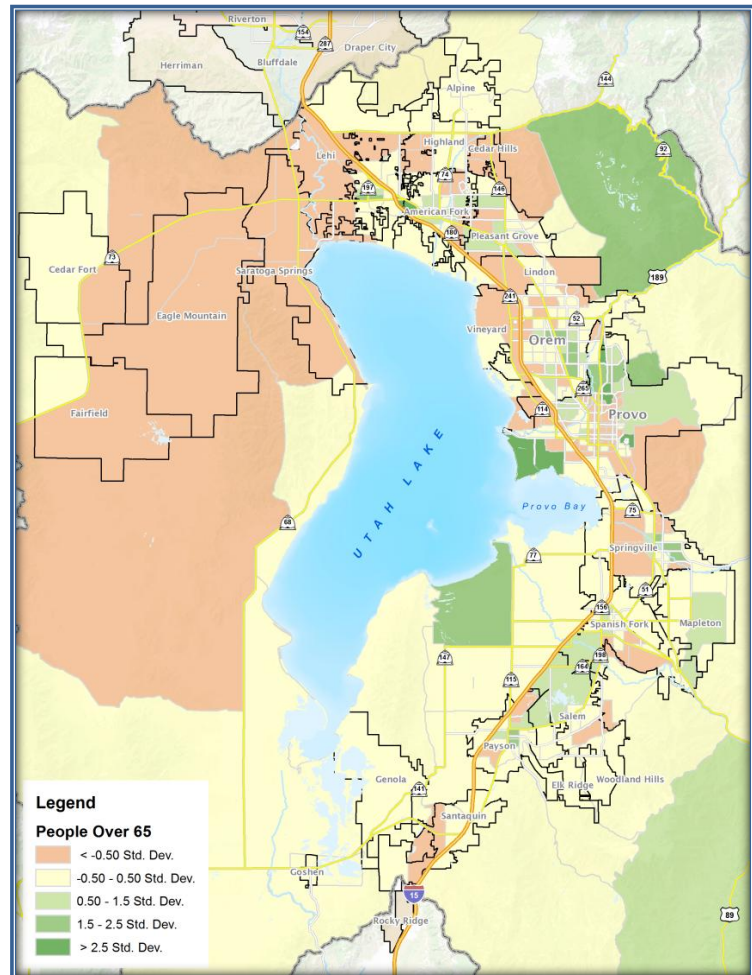
Persons described as elderly in the 2000 Census data are 65 years and greater. They represent 6.4% of the population or 23,503 in Utah County. Census block groups/TAZ Zones were analyzed to see which ones had a greater than average concentration of persons over 65. The blocks were then layered over the Regional Plan projects. The elderly population in Utah County appears to slightly cluster in the Provo area. Due to the distribution of this population and the planned projects in that area and other areas the effects of the projects on the elderly populations does not appear to be significantly greater than the projected impacts on the area's population in general.

The Persons over 65 Map illustrates elderly populations mapped by one standard deviation in intensity greater than the region average of 6.4%.

## **CONCLUSIONS**

- Many cities have general plans that outline neighborhoods as well as neighborhood councils, which can be helpful in designing transportation facilities that provide access without creating social barriers.
- Any Transportation Project that will create a barrier within a currently functioning neighborhood should be redesigned or relocated.
- Design for convenient access to shopping, medical services and employment should be provided with special consideration of the elderly and disabled. For example, wide street crossings need sufficient signalization and time allotted for slower moving citizens to cross.
- Uneven burdens for transportation negative impacts or benefits should be avoided through considering spatial distribution of disadvantaged groups in relationship to transportation facilities.
- A balanced system providing equal benefits and impacts throughout the area with all modes is included in the Regional Plan through GIS analysis. This balance should be carried forward through the implementation of the plan.

## ***PERSONS OVER 65***



# 2040 METROPOLITAN TRANSPORTATION PLAN

## TRANSPORTATION PROGRAMS AND SYSTEMS

### SAFETY

Mountainland supports the goals of the current Utah Comprehensive Safety Plan produced by UDOT. Of the Emphasis, Continuing, and Special Safety areas identified, the MPO is concentrating on three most pertinent to its planning efforts – Improve Intersection Safety, Improve Pedestrian Safety, and Improve Bicycle Safety.

All three are interconnected, as the majority of pedestrian and bicycle accidents that involve major injury or death occur at intersections. Identifying specific accident locations, crash causes and countermeasures is beyond the broader planning level scope of the MTP, but by working in partnership with UDOT, MAG has identified ‘hot spots,’ generalized locations that stand out in the crash data for injury or fatality.

As MTP projects move forward, and as near-term Transportation Improvement Projects (TIP) are selected, MAG encourages sponsors to investigate these locales and incorporate safety improvements from the design stage. In particular, TIP projects with proposed safety improvements are given added priority scoring during the MPO’s bi-annual competitive selection and funding process.



**PEDESTRIAN  
INTERSECTION  
CROSSING**

This information is protected under 23 USC 409

### INTERSECTION HOT SPOTS

2006 thru 2008 Hot Spot List  
Serious Injury and Fatal Crashes Only

#### MOTOR VEHICLE ONLY

|                                   |   |
|-----------------------------------|---|
| University Ave & 3700 North       | 7 |
| University Ave & 4800 North       | 5 |
| 2230 North & University Parkway   | 5 |
| US-89 500 West & 100 North, Provo | 4 |
| State Street & 1400 North, Provo  | 3 |
| US 89 at 500 East, American Fork  | 3 |
| University Ave & 900 South        | 3 |

2006 thru 2008 Hot Spot List  
Injury and Fatal Crashes (Severity 2 thru 5)

#### INVOLVING A NON-MOTORIST

|                                                        |   |
|--------------------------------------------------------|---|
| University Ave, 1450 North - University Parkway, Provo | 7 |
| University Ave, 900 South - 600 South, Provo           | 6 |
| University Ave, 100 North - 400 North, Provo           | 6 |
| University Av., SR-265 - 1990 South, Provo             | 6 |
| State Street, 1230 North - 550 West, Provo             | 5 |
| 1600 South - 800 South, Orem                           | 5 |
| University Ave, 700 North - 900 South, Provo           | 5 |

This information is protected under 23 USC 409



## SECURITY

The security of the transportation system is a national and regional priority. The focus of the MPO is to support ongoing local, state, and federal initiatives to address transportation system security and emergency preparedness planning in Utah County. The MPO continues efforts to improve the security of our regional transportation system by working with leaders of local governments, UDOT, UTA, Utah Division of Homeland Security and various federal agencies to prepare for a regional incident.

Coordination meetings with these groups and MPO staff have identified the following security related plans, documents, and systems that currently exist.

- Mountainland Pre-Disaster Hazard Mitigation Plan
- Mountainland Interoperability Emergency Communications Plan
- Utah Division of Homeland Security(UHS) Critical Infrastructure Plan
- UHS Strategic Highway Military Plan
- Utah Traffic Operations Center
- UHS “Be Ready Utah” public information system.
- UTA Transit Security Plans.
- Community Emergency Management Plans.

In addition, to the coordination efforts, the MPO used its unique transportation modeling ability to simulate traffic after a major disaster to better understand system redundancy. As a portion of the Mountainland Pre-Disaster Hazard Mitigation Plan, staff used FEMA’s HAZUS model to simulate a 7.0 earthquake along the Wasatch Front. Included in the accompanying damage assessment report is a listing of bridges that may be susceptible to potential damages and the usable capacity of

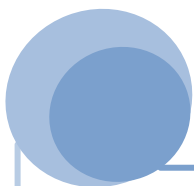
those bridges at certain intervals after the event. A model run was done to simulate traffic 7 days after the event. A simple initial redundancy analysis was done to identify potential choke points in the event of a disaster. Appendix - Earthquake Scenario Modeling Report.

## GOAL

The primary goal of the MPO is to improve the security of our transportation system throughout the region by supporting ongoing local, state and federal initiatives that address transportation system security and emergency preparedness planning in the Mountainland region.

## STRATEGIES

- Continue coordination with local state and federal agencies to improve transportation system security.
- Integrate system security and redundancy into the project selection and construction process.
- Provide transportation modeling as a tool for security and emergency management planning.



# 2040 METROPOLITAN TRANSPORTATION PLAN

## SYSTEM PRESERVATION

During the life of the transportation plan the network of highways, transit, pedestrian, bikeways, and other transportation systems will evolve in to an urban transportation network. Proper maintenance and preservation can maximize the life and effectiveness of transportation system, and better extend lifespan and capacities. The proper management of pavement conditions and travel demand extends the life and effectiveness of the system by requiring less reconstruction costs and reducing the number of vehicles using the system.

A pavement management system consists of three major components:

- A system to regularly collect highway condition data
- A computer database to sort and store the collected data
- An analysis program to evaluate repair or preservation strategies and suggest cost effective projects to maintain highway conditions

Many of these systems are currently being developed and installed throughout the valley. As the regional system expands, these components can be combined with planning needs and political considerations to develop annual highway repair and preservation programs. See the Appendix - Transportation System Programs for more details.

## SYSTEM MANAGEMENT

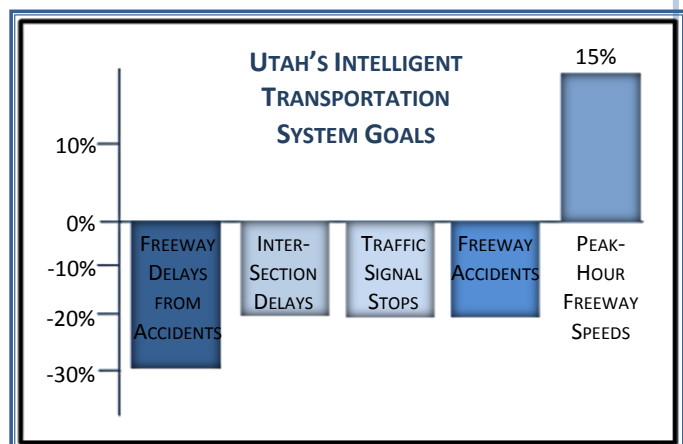
The MTP Local Goals include “make the system work better.” This can include installing sidewalks in areas that lack them, providing handicap access, the use of traffic sensors and cameras to monitor and measure traffic, and allowing transit to operate better when interfacing with automobile traffic. Local governments also give vital support to both system management and demand

management. Transportation System Management (TSM) strategies include incident management, ramp metering, High Occupancy Vehicle / Toll (HOV / HOT) lanes, signal coordination, access management, and Intelligent Transportation Systems (ITS), which overlaps several of the previous strategies. Most of these strategies are currently applied to some degree but need to be expanded or enhanced for greater benefit to the performance of the transportation system.

Transportation Demand Management (TDM) strategies include transit service in all its forms (bus, light rail, commuter rail, and bus rapid transit), ridesharing, flextime, telecommuting, pedestrian and bicycle accommodations, growth management, and congestion pricing. Many of these strategies are currently applied as part of the existing transportation network. Increased implementation of these strategies is needed. See the Appendix - Transportation System Programs for more details.

## INTELLIGENT TRANSPORTATION SYSTEMS

“Non-recurring” congestion, such as that caused by traffic accidents, highway construction, or weather conditions, has been estimated to account for around 50 percent of traffic congestion in the region.



# 2040 METROPOLITAN TRANSPORTATION PLAN

Intelligent Transportation Systems (ITS) are a vital tool to manage the effects of nonrecurring congestion. One element of these systems includes dynamic message signs to alert motorists of upcoming incidents so that they can take an alternate route. Communication systems to speedily alert emergency management providers, traffic control centers, dispatch, incident management personnel, the media, and others about incidents are also part of ITS. Detectors and cameras further aid in verifying and managing these situations.

ITS can also be used to better manage recurring congestion, such as occurs during weekday peak commuting times. This is accomplished through means such as signal timing plans on arterial streets and ramp metering to improve freeway traffic flow. Coordinating signals can reduce delays by 20 to 30 percent. Ramp metering also has significant effects in decreasing delay.

The following are an example of ITS projects that are being planned for Utah County. A more complete list can be found in the Mountainland ITS Deployment Plan. See the Appendix - Transportation System Programs for more details.

- **Closed Circuit Television Camera Surveillance:** provides real-time picture of highway conditions and incidents on routes throughout the highway system.
- **Advanced Rail Crossing Warning:** alerts drivers of a blocked rail crossing well in advance so that the driver may take an alternate route.
- **Traffic Monitoring Stations:** provides vital, real-time information about traffic volumes and speeds.
- **Variable Message Signs:** provide the



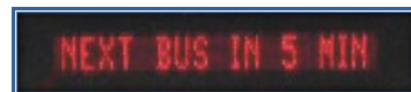
traveling public with information about road conditions ahead so that the driver can take appropriate action.

- **Road Weather Information System:** provides real-time information on weather and pavement conditions that can then be relayed to the traveling public.
- **Highway Advisory Radio:** provides traveling public advice about road and weather conditions via a car radio frequency.
- **511 Traveler Information Hotline:** Voice activated phone system that delivers real-time information on construction and maintenance projects, road closures, major delays, special events, weather and road conditions, and transit operations.
- **Transportation Information Website:** provides real-time information on



construction and maintenance projects, road closures, major delays, special events, weather and road conditions, and transit operations.

- **Hazardous Materials Management:** a computerized model that provides information about the movement of hazardous materials through the area.
- **On-board Passenger Counting System:** provides vital information about passenger boarding and alighting by location and time of day.
- **Electronic Reader Boards:** Located at train stations and at key bus stops, they give arrival times and traveler information for incoming buses and trains.



- **Traffic Signal Interconnect Projects:** Link traffic signals to allow better signal coordination along main corridors and better access to update signal timing plans.

## CONGESTION MANAGEMENT PROGRAM

The MPO Congestion Management Program is under the direction of the MPO Technical Advisory Committee (TAC). This committee evaluates congestion problem areas, determines the possible causes of congestion, and identifies strategies to alleviate congestion and improve transportation efficiency. If congestion can be alleviated by congestion mitigation strategies alone, then these strategies are proposed in place of capacity-increases. Where additional general-purpose lanes are determined to be an appropriate strategy, congestion management strategies will be proposed along with the project.

Additional information is available in the Mountainland Congestion Management Process documents.

## HIGHWAY FUNCTIONAL CLASSIFICATIONS

Functional classification defines the role that each street, road, and highway will play in moving traffic from trip origins to destinations. Access is best served by streets with driveways and parking spaces convenient to the individual origin or destination of each traveler. Mobility is best served by controlled access highways where there is minimum interference with the main traffic flow from side traffic. Since it is impossible to build a freeway between each origin and destination a compromise is needed; one that will provide the best practical balance between serving access and mobility.

Though the transportation plan lists only the needs of the regional highway system that function as a Minor Arterial and above, the collector and local system are an important element of the system. This plan supports the collector road system that is listed on the Utah

Functional Class Road System Map and all programs that support it. Though the capacity needs are not listed in this plan, capacity and congestion relief projects remain eligible for MPO federal funding. See the Appendix - Transportation System Programs for more details.

## REGIONALLY SIGNIFICANT CORRIDORS

The following are principal highway corridors within the Utah County area today.

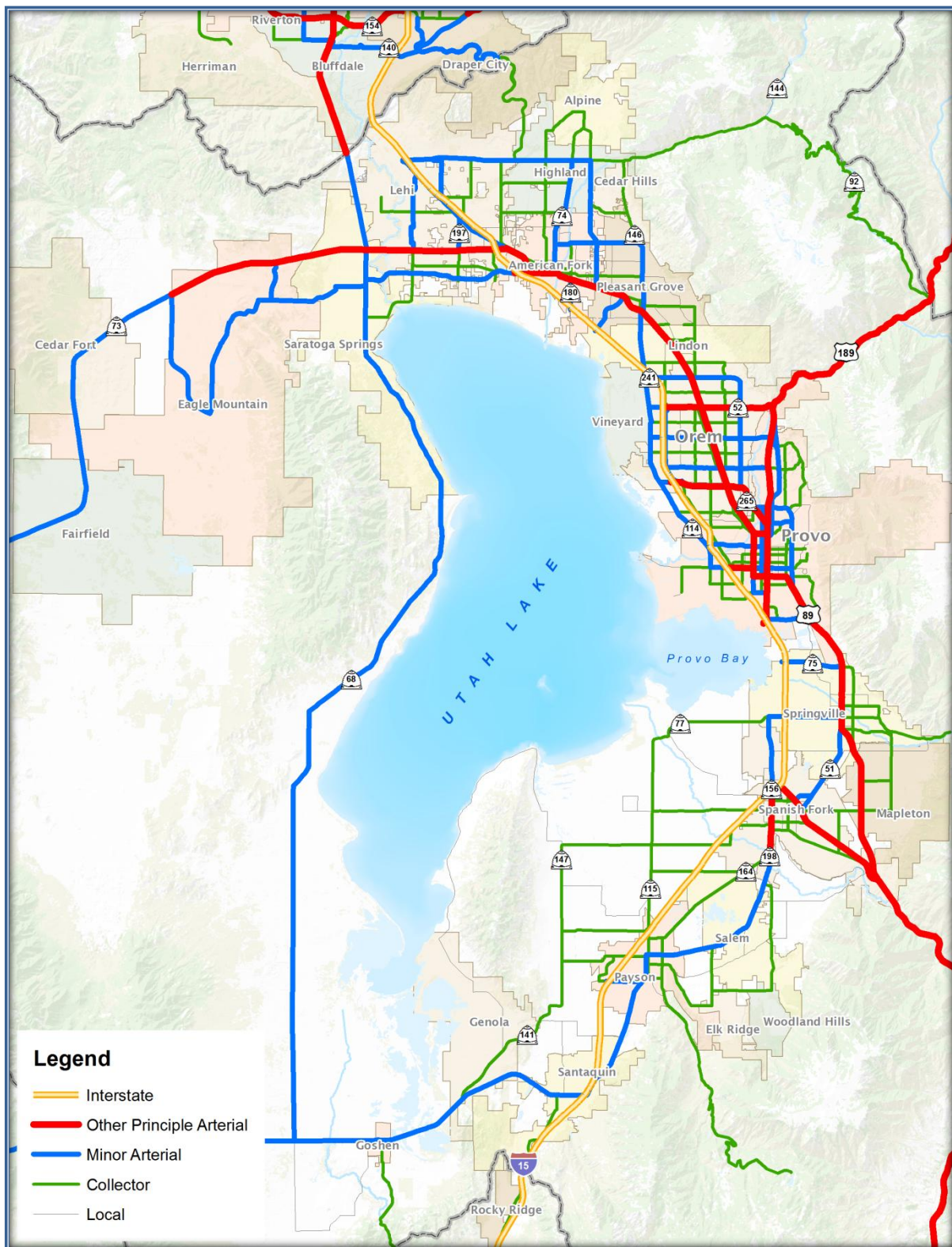
- I-15 Freeway
- Orem 800 North / SR-52
- Pioneer Crossing Blvd / SR-145
- Provo Center Street / SR-114
- Spanish Fork Main Street / SR-156
- Timpanogos Highway / SR-92
- University Parkway / SR-265
- University Ave / US-189
- US-89
  - State Street - I-15 Freeway, Lehi to American Fork Main Street
  - State Street / American Fork Main Street - I-15 Freeway, American Fork to Lindon 200 South
  - State Street - Orem 2000 North to Bulldog Blvd, Provo
  - Provo 500 West - Provo 300 South to Bulldog Blvd
  - Provo 300 South - Provo 500 West to Provo 700 East
  - South State Street / Springville Main Street
  - Springville to Mapleton

See the Appendix - Transportation System Programs for map and more details.



# 2040 METROPOLITAN TRANSPORTATION PLAN

## HIGHWAY FUNCTIONAL CLASSIFICATIONS



# 2040 METROPOLITAN TRANSPORTATION PLAN

## PARK AND RIDE LOT SYSTEM

Park and ride facilities are an important component in improving the air quality and traffic congestion problems that currently exist in Utah Valley. Park and ride facilities help decrease the number of single occupant vehicles on the transportation system by ensuring that people will have a transition point to ridesharing and mass transit. The resulting ridesharing and use of mass transit reduces fuel consumption, mobile source emissions, traffic congestion, and destination parking requirements.



**LEHI PARK AND RIDE LOT**

Existing park and ride lots fall into two categories: exclusive-use and joint-use. Exclusive-use lots are built for the specific purpose of providing park and ride functions. These lots are usually owned by UDOT and primarily serve traffic on interstates and major arterials. Joint-use lots share under-utilized public or private parking lot space that is being used for other purposes such as shopping or Sunday worship. The main advantage of joint-use lots is the cost, which is usually little, if any. Despite a lack of a formal agreement between private owners and UTA, many businesses have not objected to the use of their parking lots by commuters. However, some locations have so many commuters using the lots that the businesses' customers have trouble finding parking and conflicts arise.

The total number of improved and unimproved exclusive-use stalls currently in Utah Valley is 535, of which 447 are improved and 88 unimproved. The construction of commuter rail and light rail stations will significantly add to both the demand and number of stalls in Utah County.

## TRANSPORTATION AND TRANSIT ENHANCEMENTS

UDOT manages the Transportation Enhancement Program for the entire state without sub allocation to the MPOs. This program provides opportunities to use federal highway dollars to enhance the cultural, aesthetic and environmental aspects of the nation's inter-modal transportation system. To qualify for funding, all projects must be related to surface transportation and fit into at least one of the following 12 federally designated activities:



**PEDESTRIAN FRIENDLY  
PROVO CENTER STREET**

1. Provision of facilities for pedestrians and bicycles
2. Provision of safety and education activities for pedestrians and bicyclists
3. Acquisition of scenic easements and scenic or historic sites
4. Scenic or historic highway programs and provision for tourist and welcome center facilities
5. Landscaping and other scenic beautification
6. Historic preservation



# 2040 METROPOLITAN TRANSPORTATION PLAN

7. Rehabilitation and operation of historic transportation buildings, structures or facilities
8. Preservation of abandoned railway corridors
9. Inventory, control and removal of outdoor advertising
10. Archaeological planning and research
11. Environmental mitigation of runoff pollution and provisions related to wildlife connectivity
12. Establishment of transportation museums

Utah's annual apportionment for this program is approximately \$6,000,000. Historically, \$2,000,000 has been programmed for local government projects and \$4,000,000 programmed on UDOT Transportation Enhancement Projects.

Recently funded projects under (SAFETEA-LU from 2005 to present) in the Mountainland MPO include the provision of facilities for pedestrians and bicycles and the provision of safety and education activities for pedestrians and bicyclists.

- Orem 800 South/UVU Extension Bike Lane Improvements
- Provo University Ave. Greenway Extension, US-189



**PROVO RIVER BRIDGE**

- Provo River Bridge Replacement
- Historic UP Rail Trail
- Point of the Mountain Trail - Draper City

- Construct Sidewalks on SR-198 at locations between Payson and Santaquin
- Sweetwater/Pony Express Trail Eagle Mountain

- Widen shoulders on SR-89; Springville to Provo
- SR-73 Trail Under Crossing near Jordan River
- Dry Creek Trail Pedestrian Underpass, Payson
- Bonneville Trail Underpass
- Art Dye Trail System, American Fork City
- Lindon Heritage Trail, East Phase
- Pleasant Grove Blvd Trail, I-15 to State Street
- Pedestrian Safety Santaquin City



The Utah Transit Authority the transit service provider and FTA grant recipient for this MPO spends 1% of FTA funds on Transit Enhancements Activities including: bus shelters, ADA compliance surfacing, bike lockers, bike racks on buses, etc.

In addition to these formal funding programs the MPO analyzes new capacity project during the MTP development for opportunities to enhance the planned capacity projects with bicycle/pedestrian community enhancements (e.g. adding shoulders for bike commuting, safe routes to school considerations), community and environmental impact reduction (e.g. sound walls, historic preservation) and transit system enhancements (e.g. bike racks on buses bike lockers). See the Appendix - Transportation System Programs for more details.



# 2040 METROPOLITAN TRANSPORTATION PLAN

## PUBLIC PARTICIPATION

The Mountainland MPO believes public knowledge, participation, and input are key elements and a vital tool in all areas of its transportation planning efforts. Meaningful public involvement eliminates participation barriers and strives to engage target populations. Successful outreach enhances all plans and proposals and increases public acceptance of projects.

The MPO staff participates in and various community-based committees, organization, classes, and business groups where transportation issues are discussed. Staff members also make presentations to state, city, and county organizations; local area Chambers of Commerce; minority organizations and businesses; university classes, and local public officials on transportation planning activities.

## OPEN HOUSES

The MPO staff conducts three annual Transportation and Community Planning Open Houses which includes UTA, UDOT, and the municipalities within the MPO. Open houses allow the public to voice their opinions through written



comments, one-on-one exchanges, and group discussions. These exchanges are incorporated into proposed plans and reports. The general public is welcome at each open house, and MAG specifically invites interested citizens, local elected officials, identified minority groups, public agencies, private transportation providers, and segments of the community affected by transportation plans, programs and projects.

## AGENCY COORDINATION

MPO staff works closely with the following state and federal agencies.

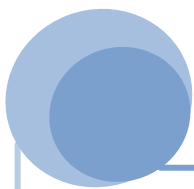
- Utah Division of Wildlife Resources
- Utah Division of Solid & Hazardous Waste
- Utah County Public Works & Assessor
- Utah Division of State History
- Utah State University Extension Service
- Utah Geologic Survey
- Environmental Protection Agency
- Utah Division of Water Quality
- Natural Resource Conservation Service
- Utah Division of Air Quality
- Wasatch Front Regional Council
- Utah Department Environmental Quality
- Utah Department of Transportation
- United States Forest Service
- Utah Transit Authority
- Utah State Parks and Recreation
- Jordan Valley Water Conservancy District
- United States Bureau of Reclamation
- US Fish and Wildlife Service
- Utah Governors Office of Planning and Budget
- Utah Environmental Response & Remediation
- Alpine School District
- Provo School District
- Nebo School District
- Utah Trucking Association
- Central Utah Water Conservancy District

Additional contacts may be made with these agencies while the plan is in the public review and comment period and as the plan is updated in the future.

## OUTREACH EFFORTS

A complete summary of all the outreach events to include special studies can be found in Appendix - Public Participation Summary.





# 2040 METROPOLITAN TRANSPORTATION PLAN

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## CALL TO ACTION

Grow the economy by expanding the base and continue our investment.

Our population will double to 1.1 million people by 2040. Today 65,000 students at BYU and UVU seek a higher education, live and work in Utah County.

Utah County is changing from a rural agricultural based economy to an urban high technology intermountain leader with Adobe, Micron IM Flash, Novell, and the National Security Agency calling us home.

We are grateful for the recent investment in I-15, Commuter Rail, the Mountain View Freeway, Pioneer Crossing, and the Timpanogos Highway and acknowledge the wisdom of providing this infrastructure when construction and bonding prices are at our advantage.

We will continue to implement our vision of the Wasatch Choice for 2040 through the US Housing and Urban Development Sustainable Communities Regional Planning Grant.

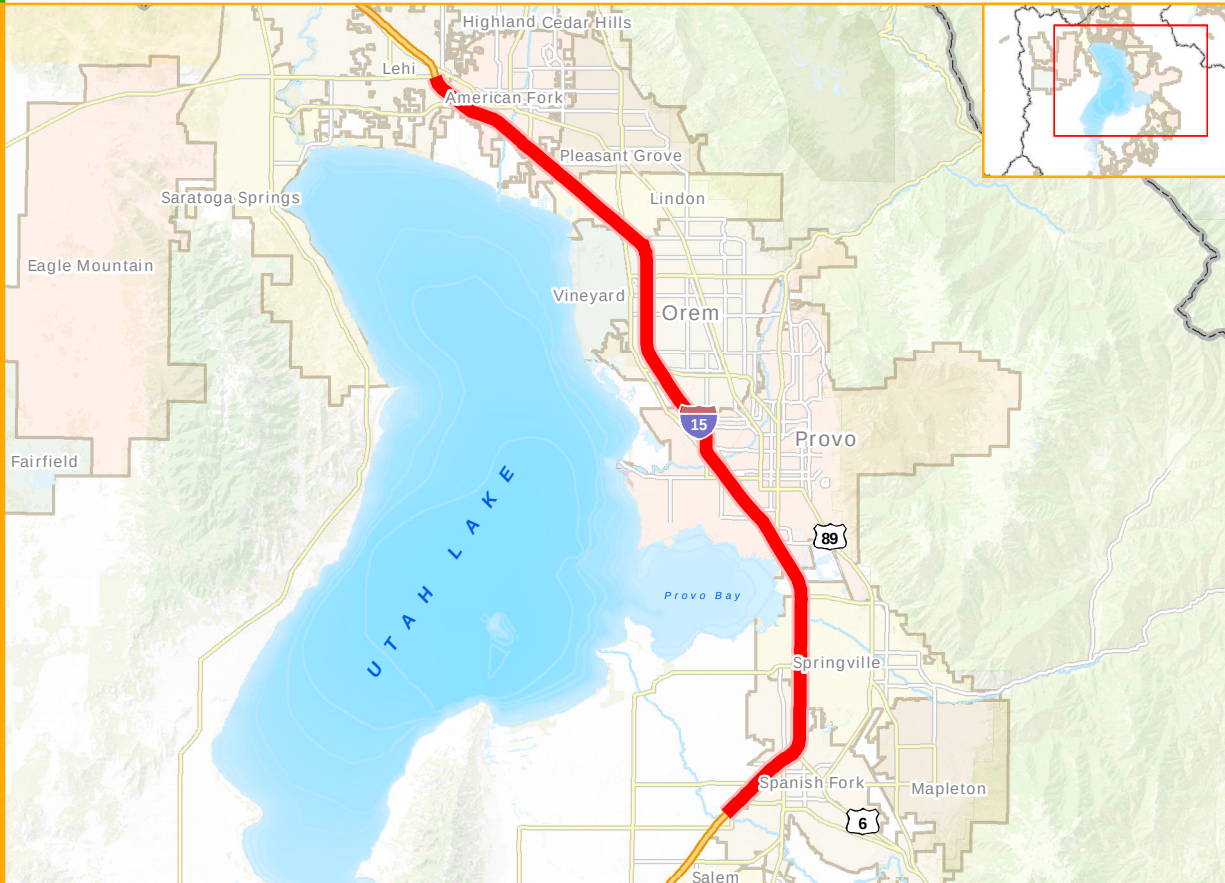
A strong economy in the US is dependent on the key elements education and transportation. We need to continue our investment to retain and grow a strong economy by supporting this critical infrastructure.

## PURPOSE & NEED

(statement is for entire I-15 FWY between Salt Lake County Line and Santaquin) The primary purpose of the project is to relieve 2030 peak hour congestion within the I-15 corridor by improving traffic congestion on mainline I-15 freeway and on the existing 22 interchanges. Several transportation-related needs were identified along the corridor in Utah and Salt Lake counties. There is a need to mitigate congestion which currently occurs and is projected to worsen due to increased travel demand. Based on projected growth in population and vehicle miles traveled, it is expected that by 2030 the freeway, without any improvements, will be near or at failure. Additionally, peak hour congestion will also exceed acceptable levels at most interchanges. This need for transportation improvements in the I-15 corridor is recognized by regional and local transportation and land use plans. Reconstruction will also address many substandard I-15 roadway features, which contribute to both congestion and safety concerns. There are 17 curves that are substandard due to inadequate stopping sight distance; two ramps which have inadequate acceleration length; and 13 bridges which require replacement or significant repair. In 2040, the daily vehicle count on this facility will range from 74,000 to 201,000.

Please visit the road project website for more detailed information regarding roadway cross section.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.i15core.utah.gov/feis.php>

1

\$1593.9  
(in millions)

## I-15 FWY CORE Reconstruction - Lehi to Spanish Fork

Lehi Main ST to Spanish Fork River

2040 METROPOLITAN  
TRANSPORTATION PLAN

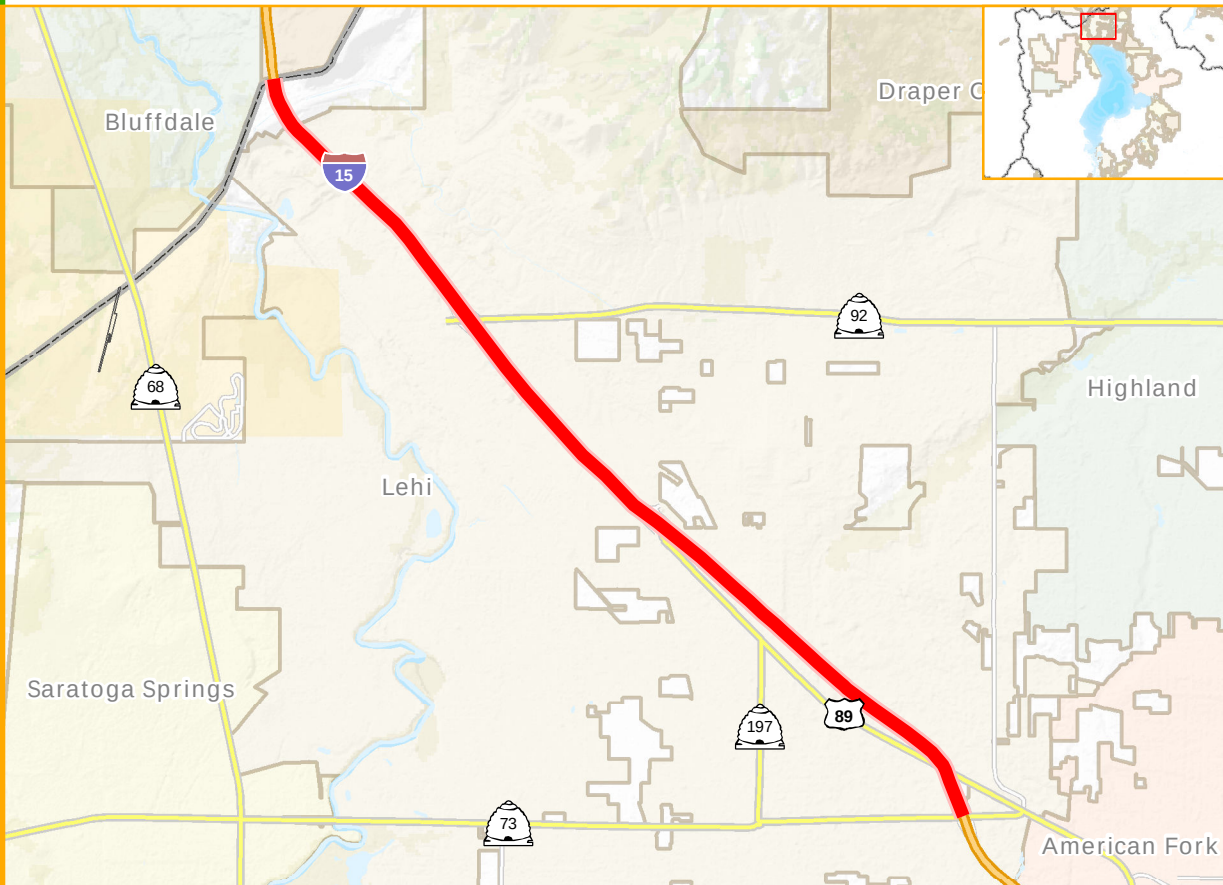
Date: 7/29/2011

## PURPOSE & NEED

(statement is for entire I-15 FWY between Salt Lake County Line and Santaquin) The primary purpose of the project is to relieve 2030 peak hour congestion within the I-15 corridor by improving traffic congestion on mainline I-15 freeway and on the existing 22 interchanges. Several transportation-related needs were identified along the corridor in Utah and Salt Lake counties. There is a need to mitigate congestion which currently occurs and is projected to worsen due to increased travel demand. Based on projected growth in population and vehicle miles traveled, it is expected that by 2030 the freeway, without any improvements, will be near or at failure. Additionally, peak hour congestion will also exceed acceptable levels at most interchanges. This need for transportation improvements in the I-15 corridor is recognized by regional and local transportation and land use plans. Reconstruction will also address many substandard I-15 roadway features, which contribute to both congestion and safety concerns. There are 17 curves that are substandard due to inadequate stopping sight distance; two ramps which have inadequate acceleration length; and 13 bridges which require replacement or significant repair. In 2040, the daily vehicle count on this facility will range from 125,000 to 176,000.

Please visit the road project website for more detailed information regarding roadway cross section.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.i15core.utah.gov/feis.php>

2

\$480.0  
(in millions)

## I-15 FWY Reconstruction - Draper to Lehi

Draper to Lehi Main ST

2040 METROPOLITAN  
TRANSPORTATION PLAN

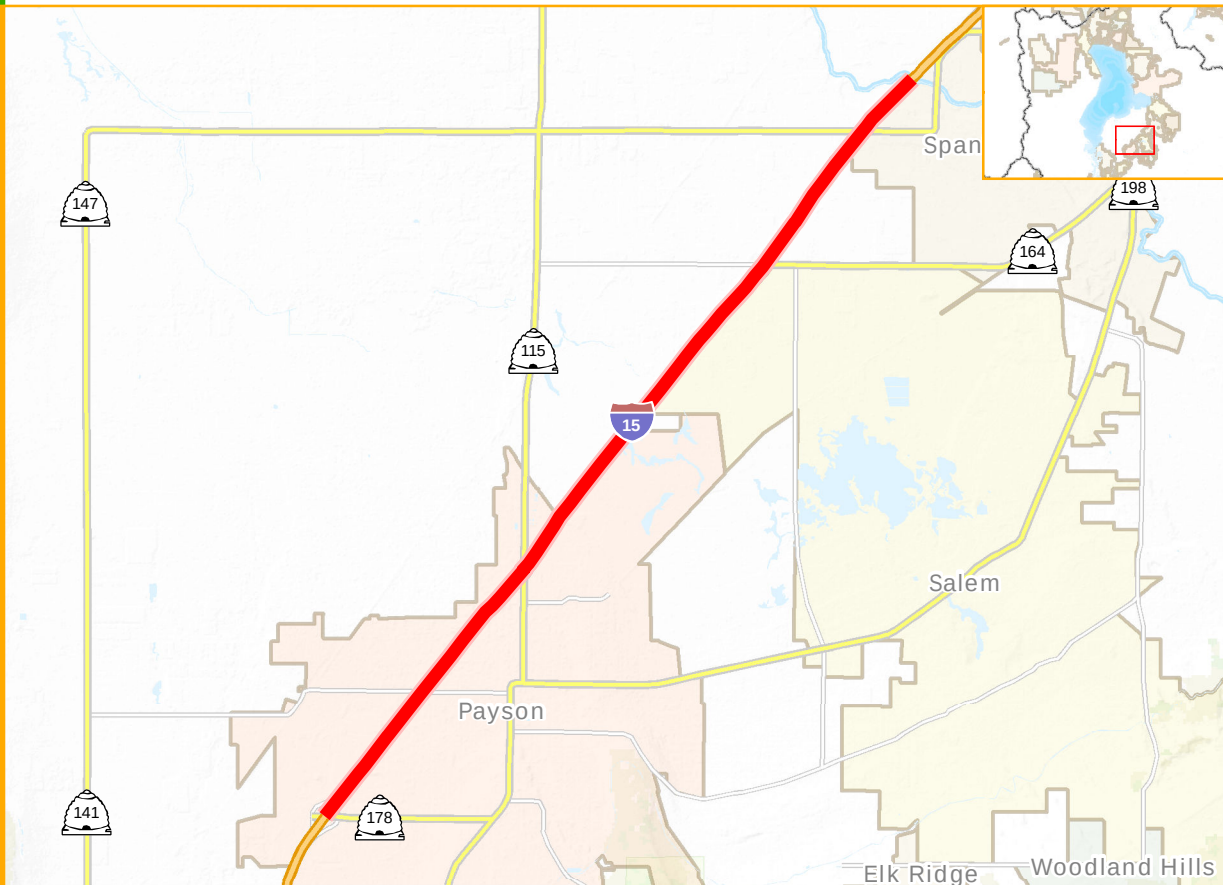
Date: 7/29/2011

## PURPOSE & NEED

(statement is for entire I-15 FWY between Salt Lake County Line and Santaquin) The primary purpose of the project is to relieve 2030 peak hour congestion within the I-15 corridor by improving traffic congestion on mainline I-15 freeway and on the existing 22 interchanges. Several transportation-related needs were identified along the corridor in Utah and Salt Lake counties. There is a need to mitigate congestion which currently occurs and is projected to worsen due to increased travel demand. Based on projected growth in population and vehicle miles traveled, it is expected that by 2030 the freeway, without any improvements, will be near or at failure. Additionally, peak hour congestion will also exceed acceptable levels at most interchanges. This need for transportation improvements in the I-15 corridor is recognized by regional and local transportation and land use plans. Reconstruction will also address many substandard I-15 roadway features, which contribute to both congestion and safety concerns. There are 17 curves that are substandard due to inadequate stopping sight distance; two ramps which have inadequate acceleration length; and 13 bridges which require replacement or significant repair. In 2040, the daily vehicle count on this facility will range from 56,000 to 83,000.

Please visit the road project website for more detailed information regarding roadway cross section.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.i15core.utah.gov/feis.php>

3

\$60.8  
(in millions)

## I-15 FWY Widening - Spanish Fork to Payson

Spanish Fork River to Payson 800 South

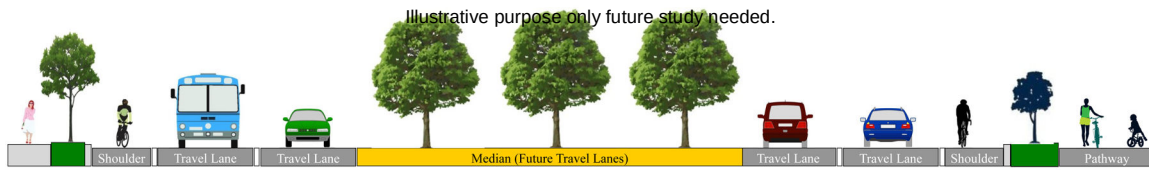
2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

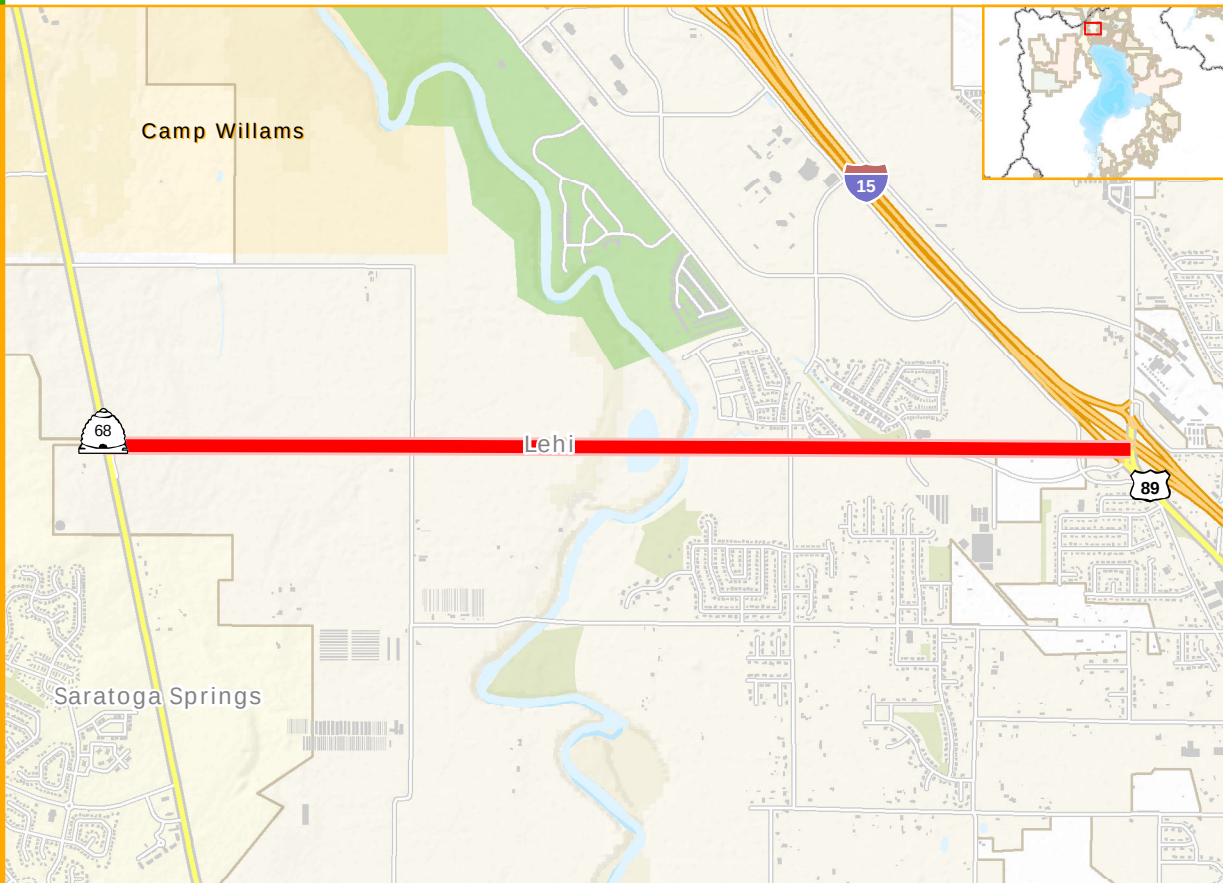


## PURPOSE & NEED

(statement is for entire MVC corridor) The Mountain View Corridor (MVC) is primarily intended to improve regional mobility by reducing roadway congestion and expanding regional mobility by creating new highway capacity and by supporting increased transit availability. Secondary objectives of the project include supporting local economic development and growth objectives as expressed through locally adopted land-use and transportation plans and policies, increase roadway safety, reduce accident rates, and increased bicycle and pedestrian options. The major transportation needs in the Mountain View Corridor study area are a result of rapidly growing population and employment in this area. The existing roadway network primarily consists of arterial streets that are not intended to accommodate a high volume of long-distance through trips and freight movements. The existing transit network consists primarily of local and express bus service. These conditions have resulted in a lack of adequate north-south transportation capacity in western Salt Lake County, a lack of adequate transportation capacity in northwest Utah County, increased travel time and lost productivity, lack of transit availability, reduced roadway safety due to increased roadway congestion, and a lack of continuous pedestrian/bicycle facilities. In 2040, the daily vehicle count on this facility will range from 38,000 to 48,000.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.udot.utah.gov/mountainview/>

8

\$120.6  
(in millions)

**Lehi 2100 N Frontage Roads**  
Redwood RD to I-15 Fwy

2040 METROPOLITAN  
TRANSPORTATION PLAN

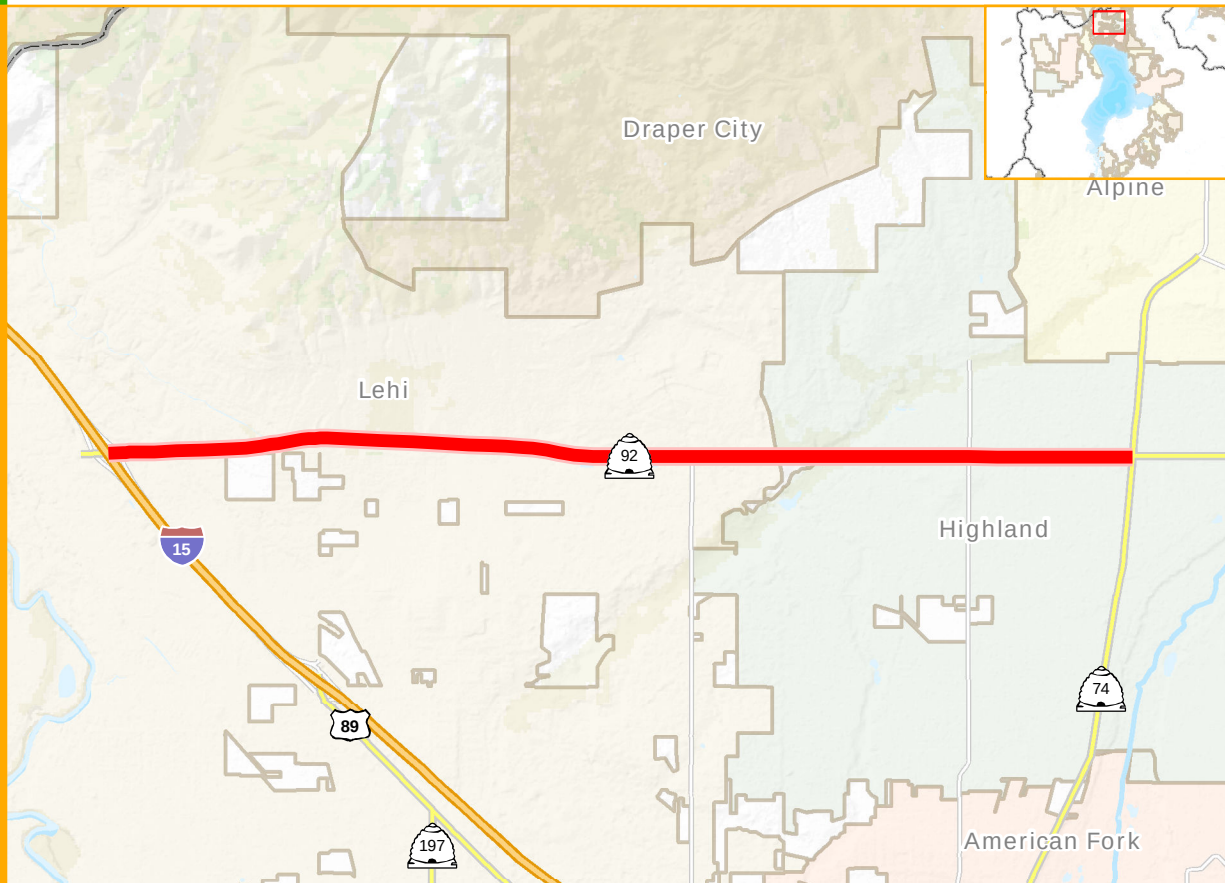
Date: 7/29/2011

## PURPOSE & NEED

Expansion of Timpanogos HWY or HWY 92 should alleviate congestion and improve traffic flow to meet the 2030 projected travel demand, provide a transportation facility with improved travel times to and from I- 15 through the year 2030, accommodate bicycles and pedestrians, balance the needs of existing and planned access points with improved traffic flow, and provide improvements that are compatible with Lehi's and Highland's development plans. The need for the project is based on current congested traffic conditions, projected population growth and development, and projected future traffic conditions. Currently HWY 92 is congested during peak travel times. The project area has undergone population growth and is expected to continue growing. Today operations are at failure and will continue to breakdown if no improvements are made. Travel time through the corridor is deteriorating and would continue to deteriorate if no improvements are made. Connectivity for planned bicycle and pedestrian trails across or along HWY 92 is incorporated into the new design with the new Murdock Canal Trail paralleling the highway. In 2040, the daily vehicle count on this facility will range from 26,000 to 48,000.

Please visit the road project website for more detailed information regarding roadway cross section.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.udot.utah.gov/sr92/>

6

\$143.6  
(in millions)

**Timpanogos HWY / HWY-92 - Lehi to Highland**  
I-15 Fwy to Alpine HWY

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

\$113.9  
(in millions)

## Geneva RD / HWY-114 - Orem

Orem 2000 S to Orem 1600 North

2040 METROPOLITAN  
TRANSPORTATION PLAN

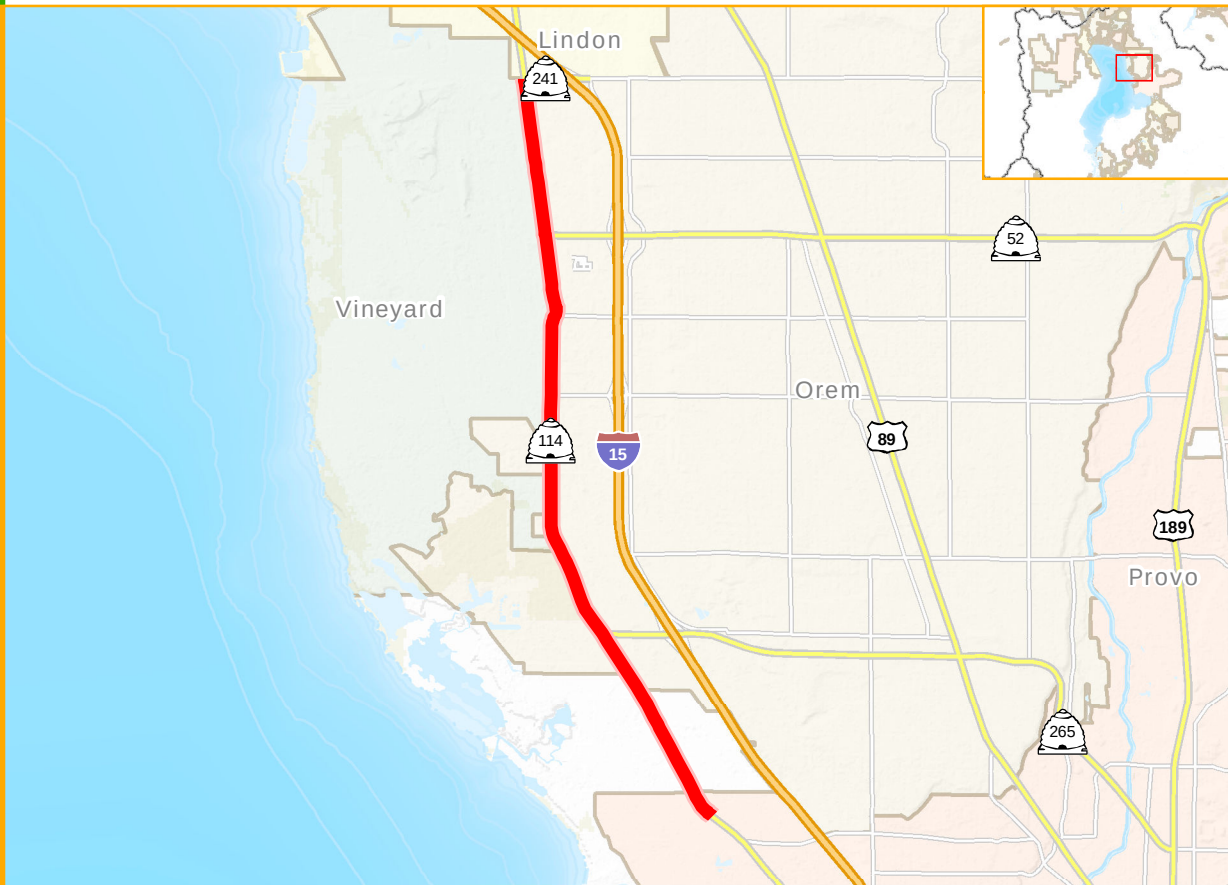
Date: 7/29/2011

### PURPOSE & NEED

Geneva RD is one of the primary north-south corridors connecting Provo and Orem to Pleasant Grove. As the area continues to grow, UDOT is planning to expand Geneva RD to improve travel for all of its users. Improvements to Geneva RD will include widening the road to 5 lanes (including a center turn lane) between University PKWY and Orem 1600 North and building a bridge over the railroad tracks near Orem 400 South. Construction of Geneva RD will began in Spring 2011 and should be completed in May 2012. The primary purpose of the project is to improve regional and local traffic mobility with the secondary purpose to increase safety and enhance opportunities for intermodal facilities on Geneva RD. In 2040, the daily vehicle count on this facility will range from 11,000 to 23,000.

Please visit the road project website for more detailed information regarding roadway cross section.

### PROJECT LOCATION MAP



### POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

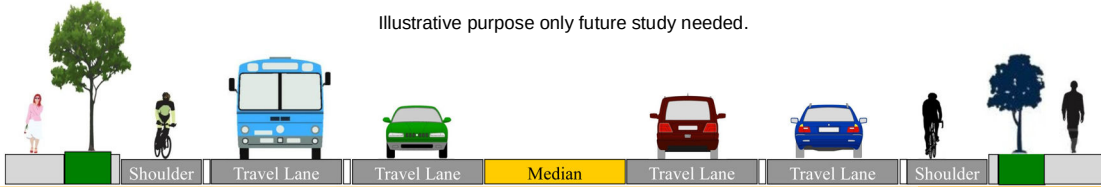
<http://www.udot.utah.gov/geneva/>



PURPOSE & NEED

Pleasant Grove 100 East (HWY-146) is a major arterial for traffic coming from Pleasant Grove and Cedar Hills connecting to State ST (US 89). This route is also the most direct way for recreation users accessing American Fork Canyon from southern portions of the county. Geneva RD (PG Main ST) is also a state highway (HWY 114) which continues south to Provo Center ST. The junctions of these two state highways with State ST make up a major travel movement of primary transportation corridors. To provide continuity between arterial roadways and to improve overall traffic operations, it is proposed to realign PG 100 East and Geneva RD to provide for a continuous movement along these two major arterials. Geneva RD is currently a five lane facility and PG 100 East is projected to need widening to a five lane facility in the future. The current mixed two to three lanes configuration of the PG 100 East corridor is insufficient for peak travel demands. The need for providing better connectivity between PG 100 East and Geneva RD has been identified by independent studies by both the city of Pleasant Grove and by MAG. In 2040, the daily vehicle count on this facility will range from 0 to 0.

Illustrative purpose only future study needed.



PROJECT LOCATION MAP



POTENTIAL IMPACTS



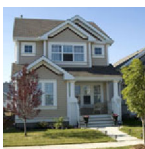
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



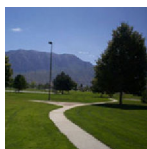
Water Quality



Wetlands



Historic



4F



6F



Wildlife

IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

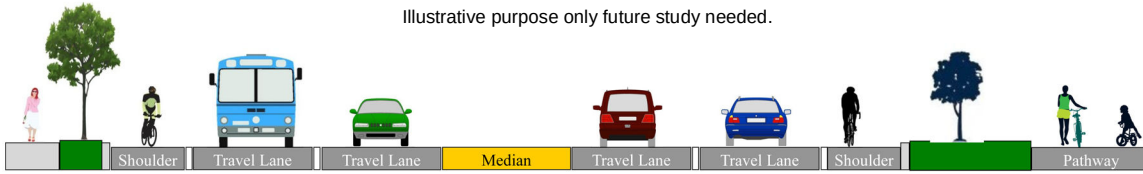
For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.



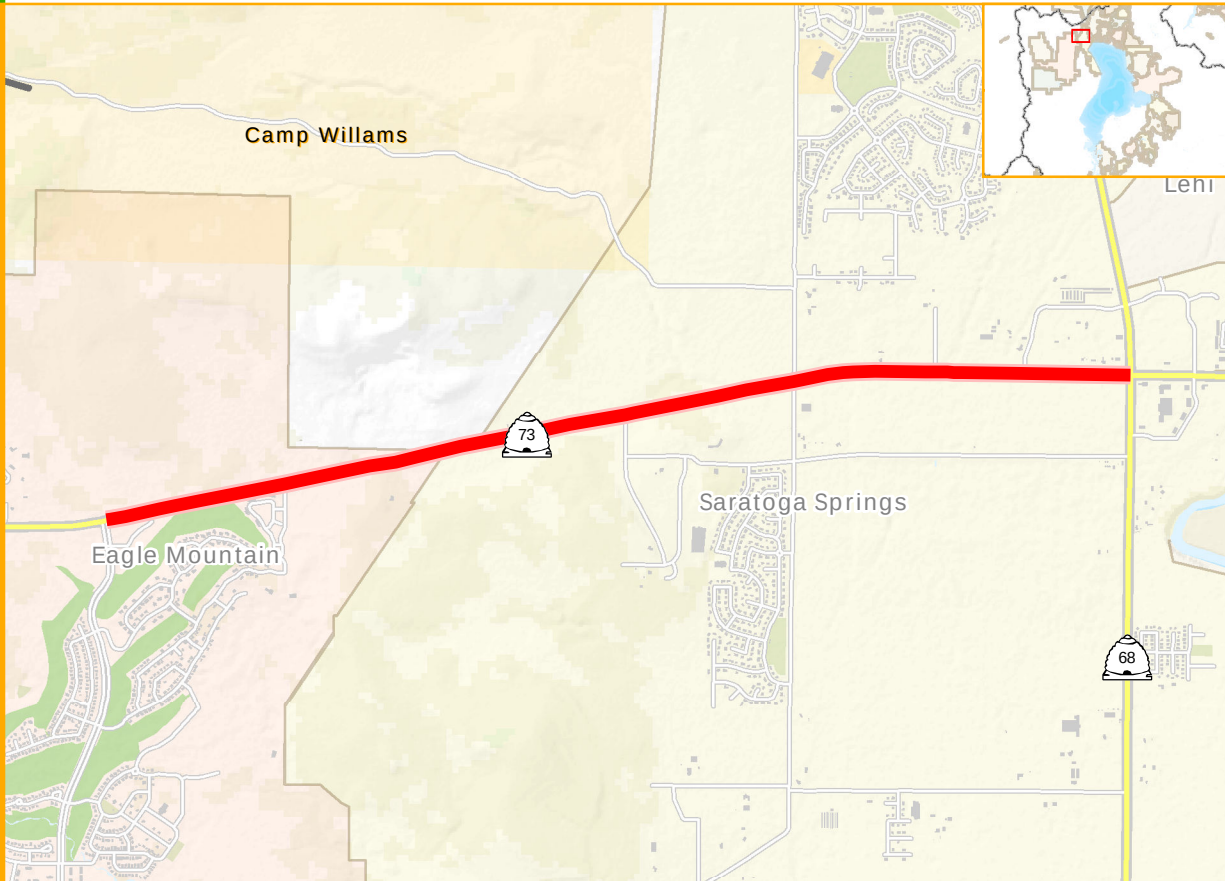
PURPOSE & NEED

HWY 73 experiences congestion in the peak periods daily. Safety is also a major concern with the higher speeds associated with this semi-rural setting and the lack of a center median or shoulders in many areas. Currently funding has been identified and construction of a new 4 lane cross section should commence in the Spring of 2011. In 2040, the daily vehicle count on this facility will range from 34,000 to 47,000.

Illustrative purpose only future study needed.



PROJECT LOCATION MAP



POTENTIAL IMPACTS



Noise



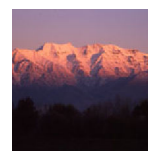
School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



Water Quality



Wetlands



Historic



4F



6F



Wildlife

IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

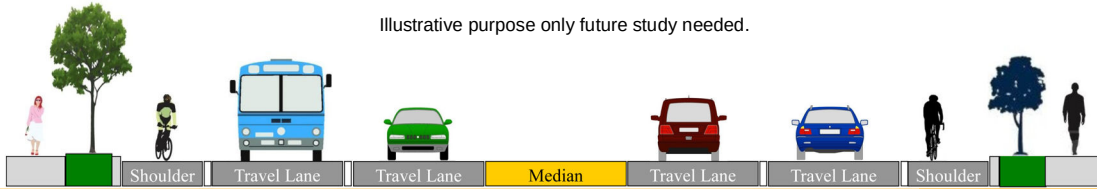
The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

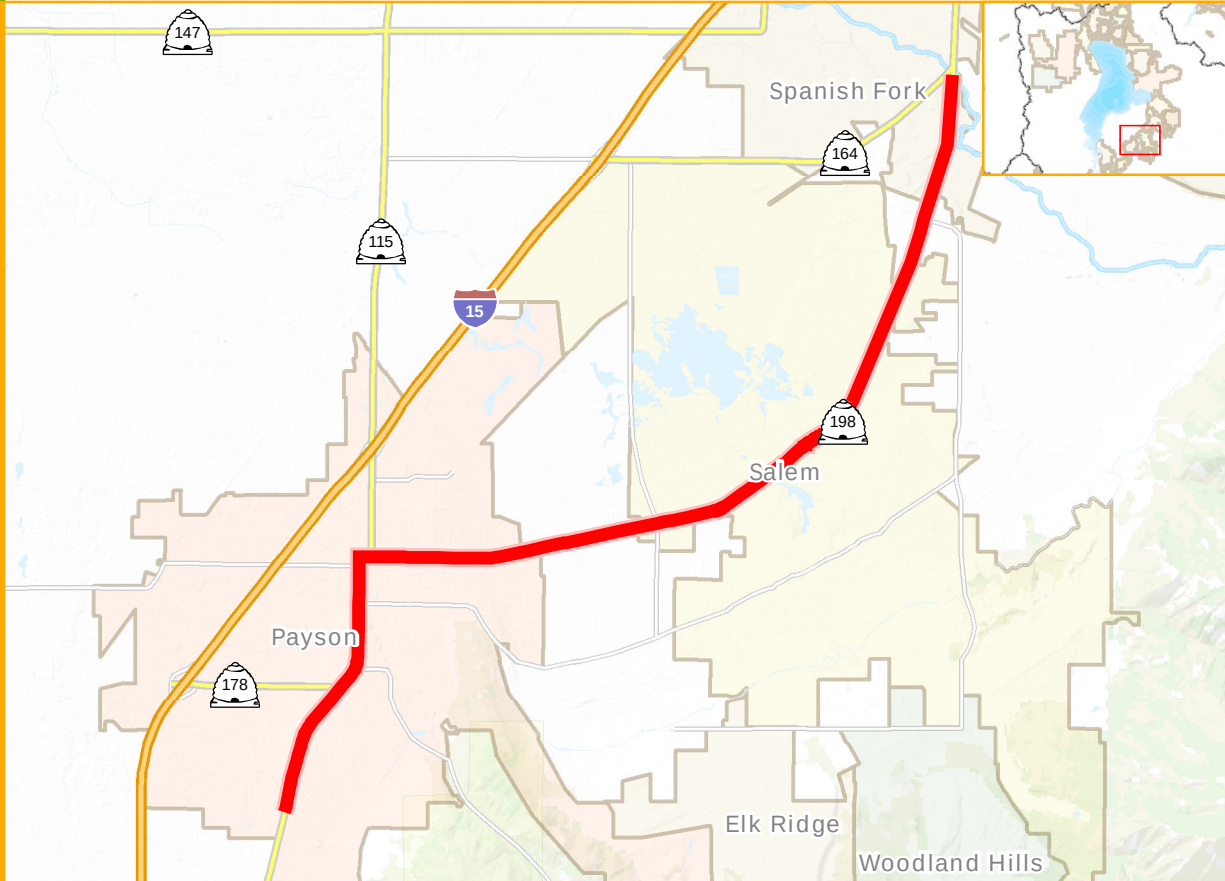
PURPOSE & NEED

HWY198 experiences congestion in the peak periods daily within the Payson area. Safety is also a major concern with the higher speeds associated in the rural areas and the lack of a center median or shoulders in many areas. Though the entire corridor needs capacity and safety improvements, the Payson area is in immediate need for additional lane capacity. Widening the road though Payson will require land acquisition and removal of some homes and businesses. No funding has been programmed or environmental work done on this project. The project should be given a high priority among other south county projects in the next 10 years. In 2040, the daily vehicle count on this facility will range from 17,000 to 32,000.

Illustrative purpose only future study needed.



PROJECT LOCATION MAP



POTENTIAL IMPACTS



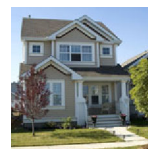
Noise



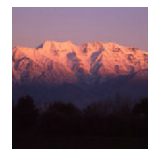
School



Land Use



Relocation



Visual



Farmland



Geologic



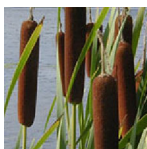
EPA Sites



Floodplain



Water Quality



Wetlands



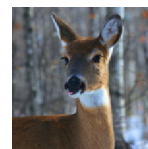
Historic



4F



6F



Wildlife

IMPACT ANALYSIS

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.



## PURPOSE & NEED

At one point this corridor was known by 10 different names or coordinates. With the expansion of the project, one change will be to have one name, North County BLVD. This project aims to improve safety, north-south mobility within the county, and emergency service and response time—including better access to American Fork Hospital. This important corridor will also interconnect users to multiple cities from Alpine to Lindon becoming the first north/south multi-lane corridor in northern Utah County. With a proposed 2040 traffic volume of 37,000 trips a day, a 4 lane cross section with center turn lanes, as designed is warranted. In 2040, the daily vehicle count on this facility will range from 18,000 to 37,000.

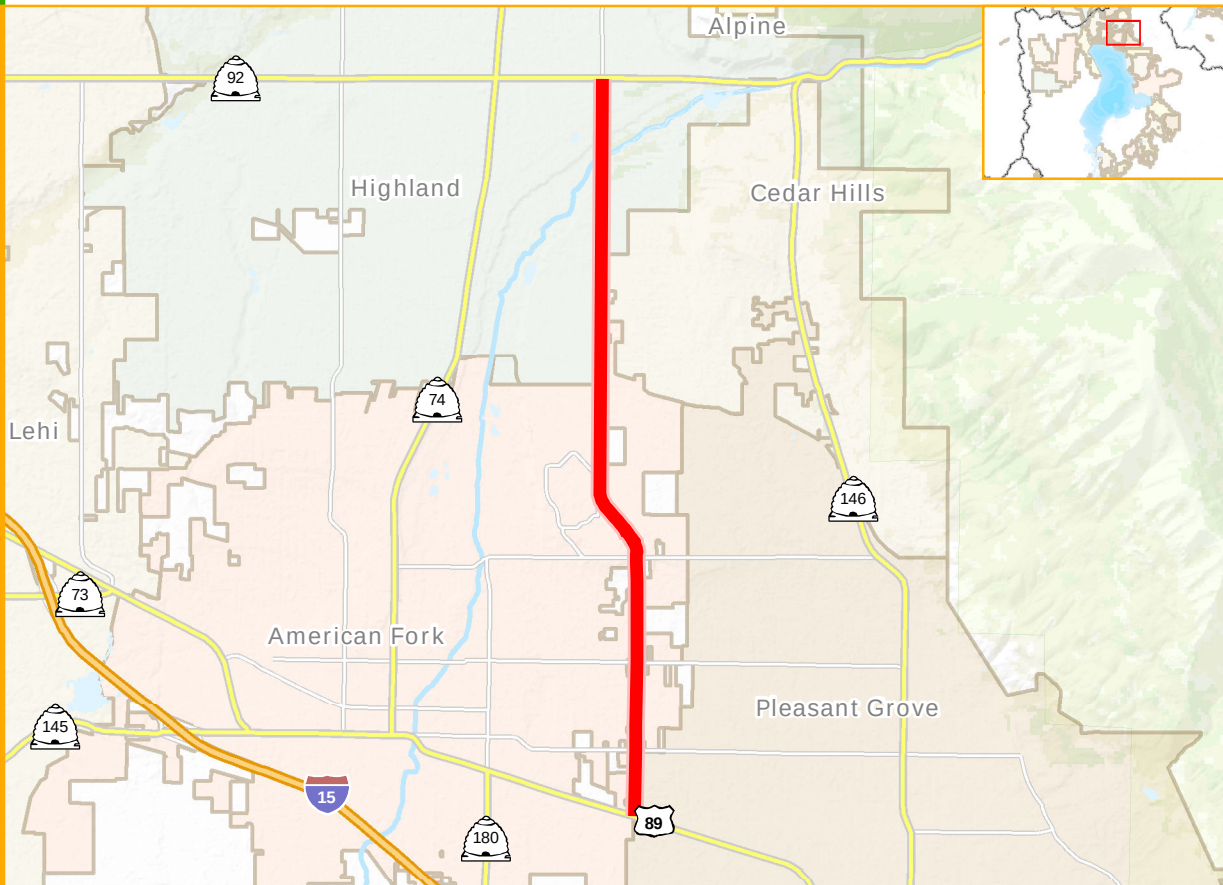
37

\$72.1  
(in millions)

## North County BLVD (UC 4800 W) HWY-92 to State ST, American Fork

Please visit the road project website for more detailed information regarding roadway cross section.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

[www.utahcountyonline.org/Dept/pubwrks/Projects](http://www.utahcountyonline.org/Dept/pubwrks/Projects)

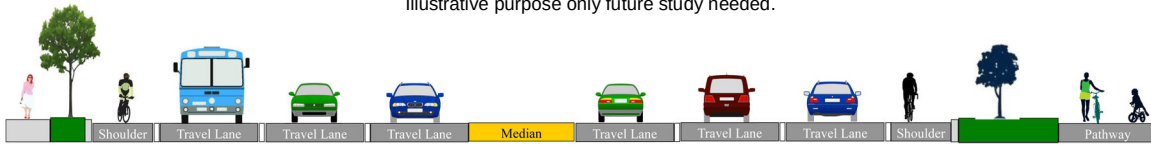
2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

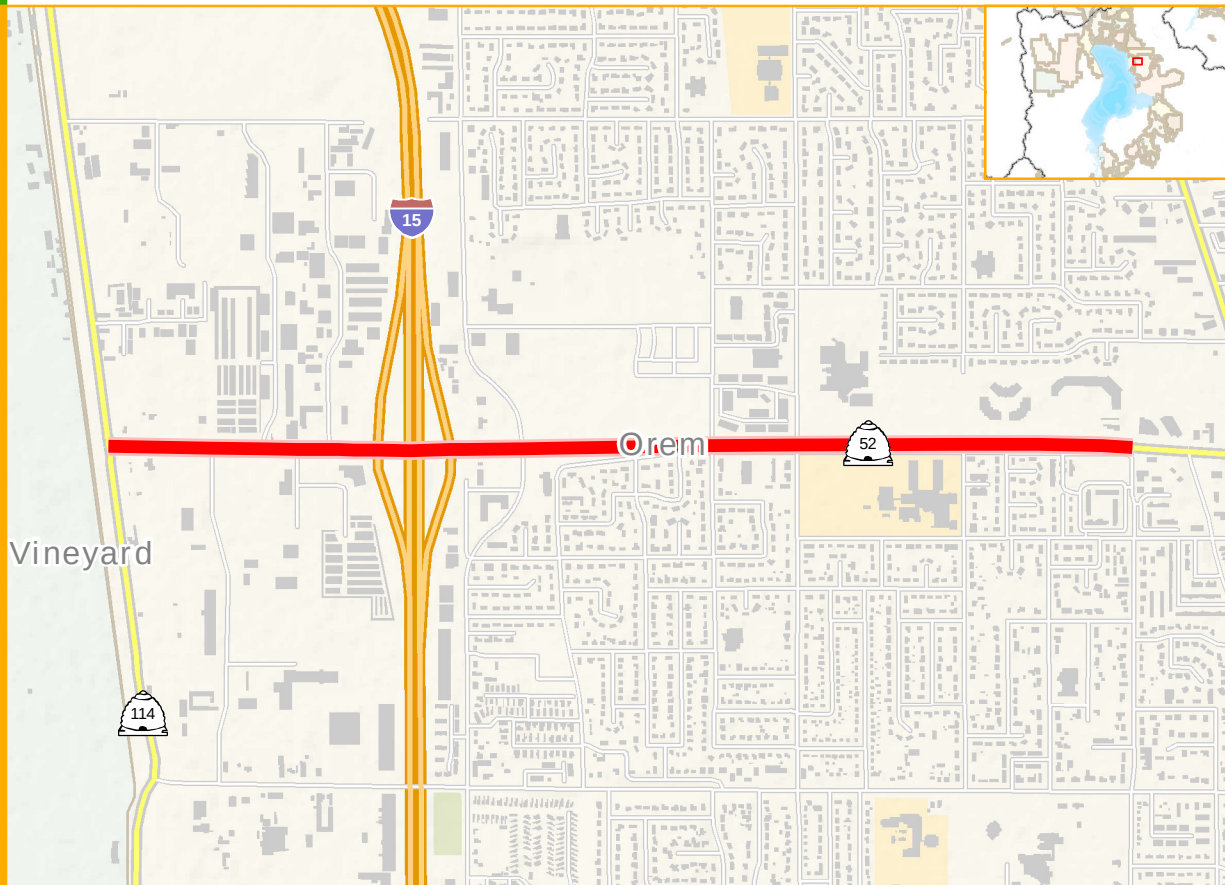
## PURPOSE & NEED

Orem 800 North experiences high traffic volumes and congestion in the peak travel times. With the completion of widening 800 North to 6 lanes east of Orem 400 West a bottleneck remains to I-15. The I-15 CORE project includes reconstruction and widening of this corridor between Orem 1200 West and Geneva RD. UDOT is attempting to acquire the remaining funds needed to construction the whole project. Construction should occur by 2013. In 2040, the daily vehicle count on this facility will range from 16,000 to 47,000.

Illustrative purpose only future study needed.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS



Noise



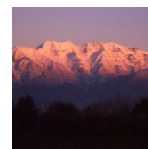
School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



Water Quality



Wetlands



Historic



4F



6F



Wildlife

### IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

38

\$12.7  
(in millions)

Orem 800 North / HWY-52  
Geneva RD to Orem 400 West

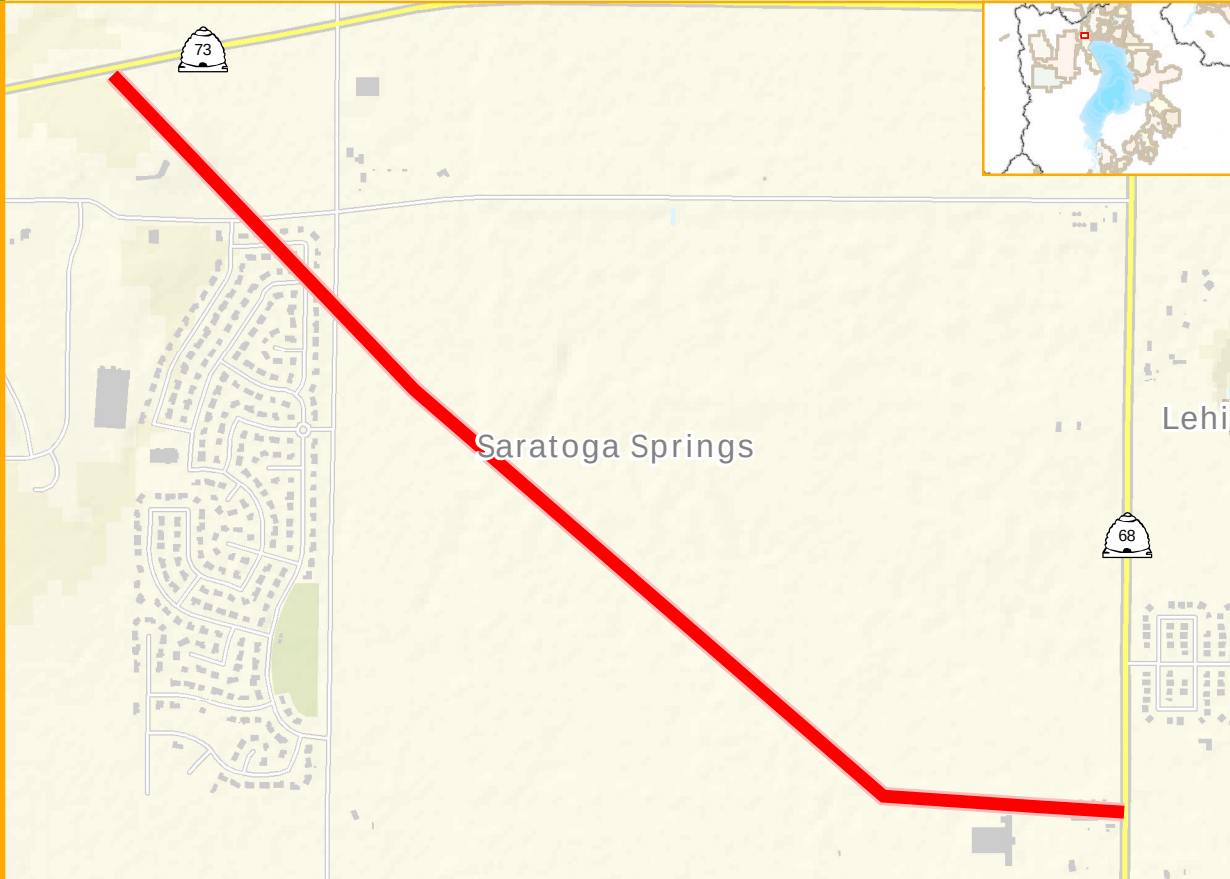
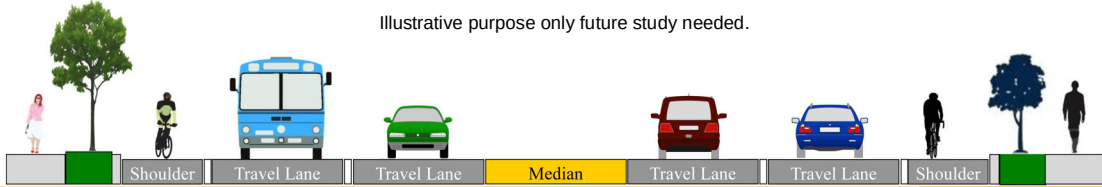
2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011



Pioneer Crossing is a 4 and 6 lane expressway type facility that was completed in 2010. It has been a major traffic reliever to Lehi Main ST. It currently extends from the I-15 Freeway in American Fork to Redwood RD in Saratoga Springs. This end point requires westbound traffic to turn onto Redwood RD to continue west on HWY 73. It is proposed to extend Pioneer Crossing west of Redwood RD connecting it to and potentially becoming HWY 73 at about Saratoga Springs 800 West. UDOT is currently studying this extension and is attempting to acquire the needed funding to construction the project. Construction could occur by 2015. In 2040, the daily vehicle count on this facility will range from 11,000 to 12,000.

Illustrative purpose only future study needed.



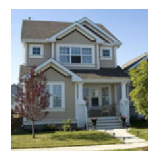
Noise



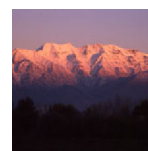
School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



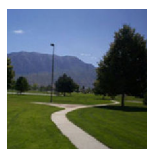
Water Quality



Wetlands



Historic



4F



6F



Wildlife

#### IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

## PURPOSE & NEED

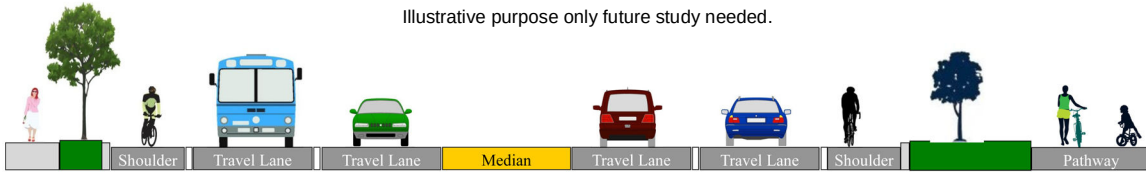
## PROJECT LOCATION MAP

## POTENTIAL IMPACTS

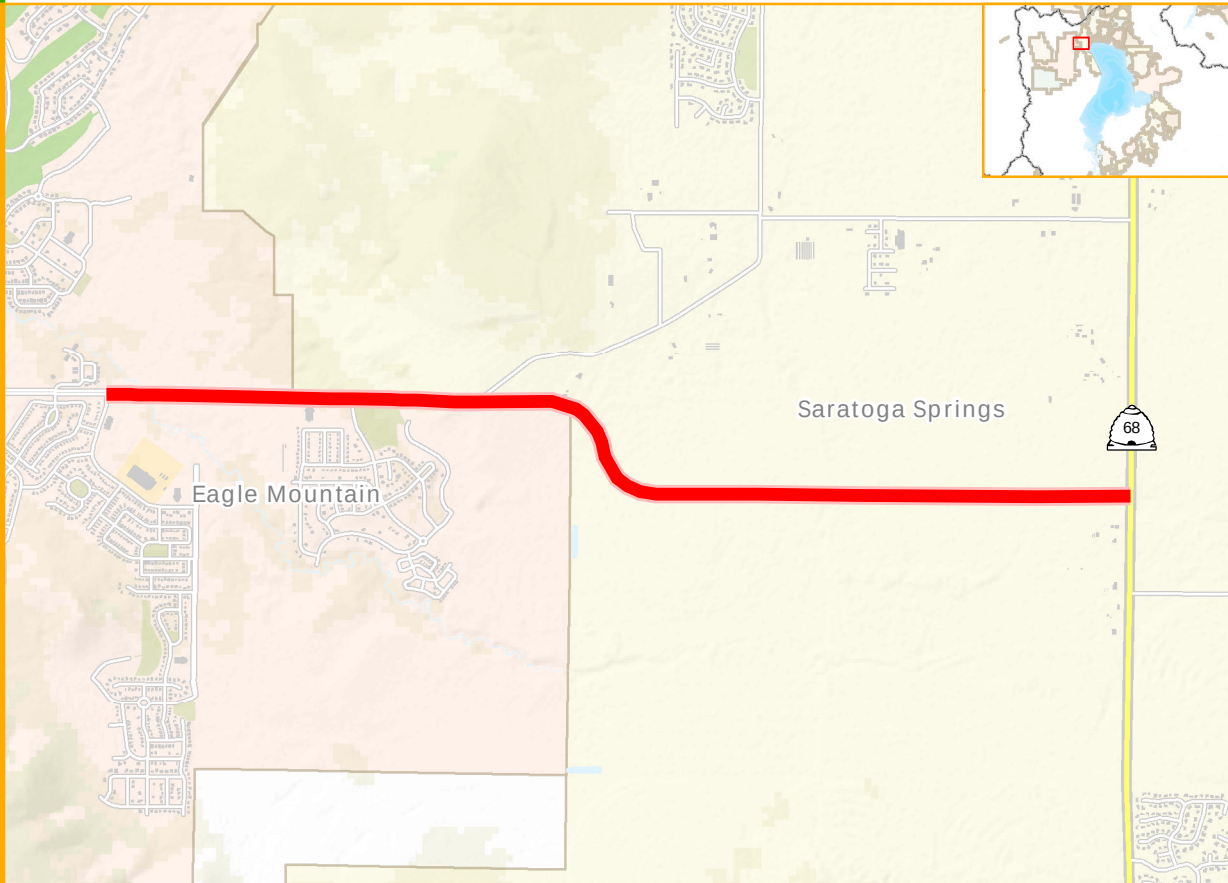
# PURPOSE & NEED

Pony Express PKWY has recently been extended to Redwood RD connecting Eagle Mountain and Saratoga Springs. This extension is currently a 2 lane configuration with bike lanes. The proposed project would expand the 2 lane section to 4 creating continuity throughout the corridor. This is an important corridor being only 1 of 2 existing corridors connecting the high growth area of Cedar Valley to eastern Utah Valley. No environmental work has been completed. Some MAG funding has been awarded to expand the trail system along the road and the cities are searching for the additional funds needed to expand the road. In 2040, the daily vehicle count on this facility will range from 19,000 to 24,000.

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



Noise



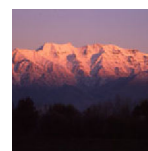
School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



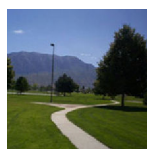
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.



# PURPOSE & NEED

Provo 500 West currently ends at Provo 1200 South at the Provo Towne Center Mall. It starts again on the south side of the I-15 Freeway serving the residential neighborhoods of the area. As a part of the I-15 CORE project, a new underpass is being constructed to connect both sides of Provo 500 West creating a much needed connection between the west and east sides of Provo. It is planned that the southern extent of this road will tie into the proposed Westside Connector road connecting I-15 at University AVE to the Provo Airport. Longer term Provo 500 West will continue south along I-15 and eventually become Spanish Fork Main ST creating a new direct access route between the south county and Provo and Orem. Other than the bridge project at I-15, no funding has been programmed for this project. In 2040, the daily vehicle count on this facility will range from 7,000 to 22,000.

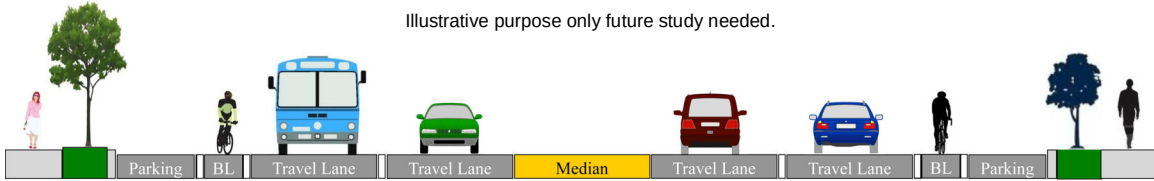
41

\$12.1  
(in millions)

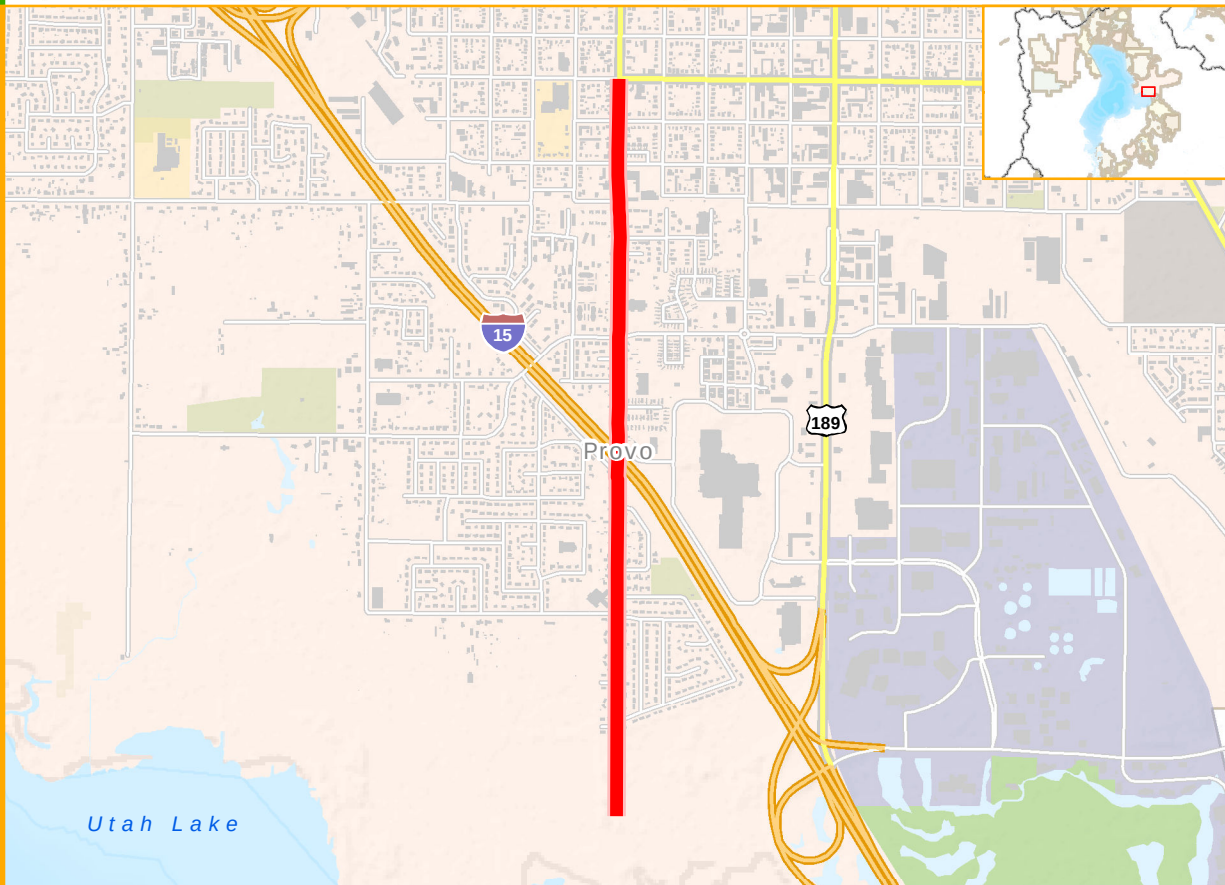
## Provo 500 West

Provo 300 South to Westside Connector RD

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



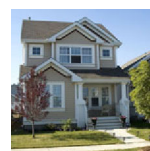
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



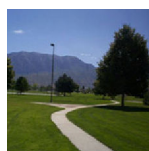
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

\$29.0  
(in millions)

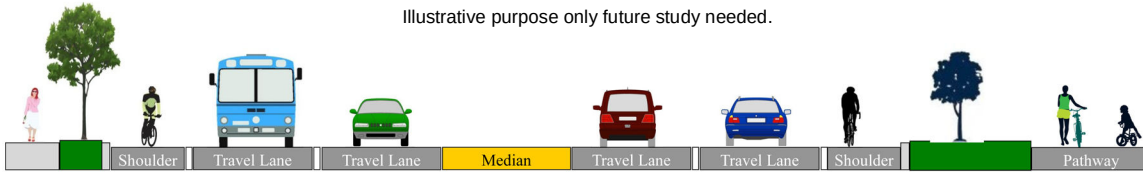
## Redwood RD / HWY-68 - Saratoga Springs

Saratoga Springs 400 North to Stillwater PKWY

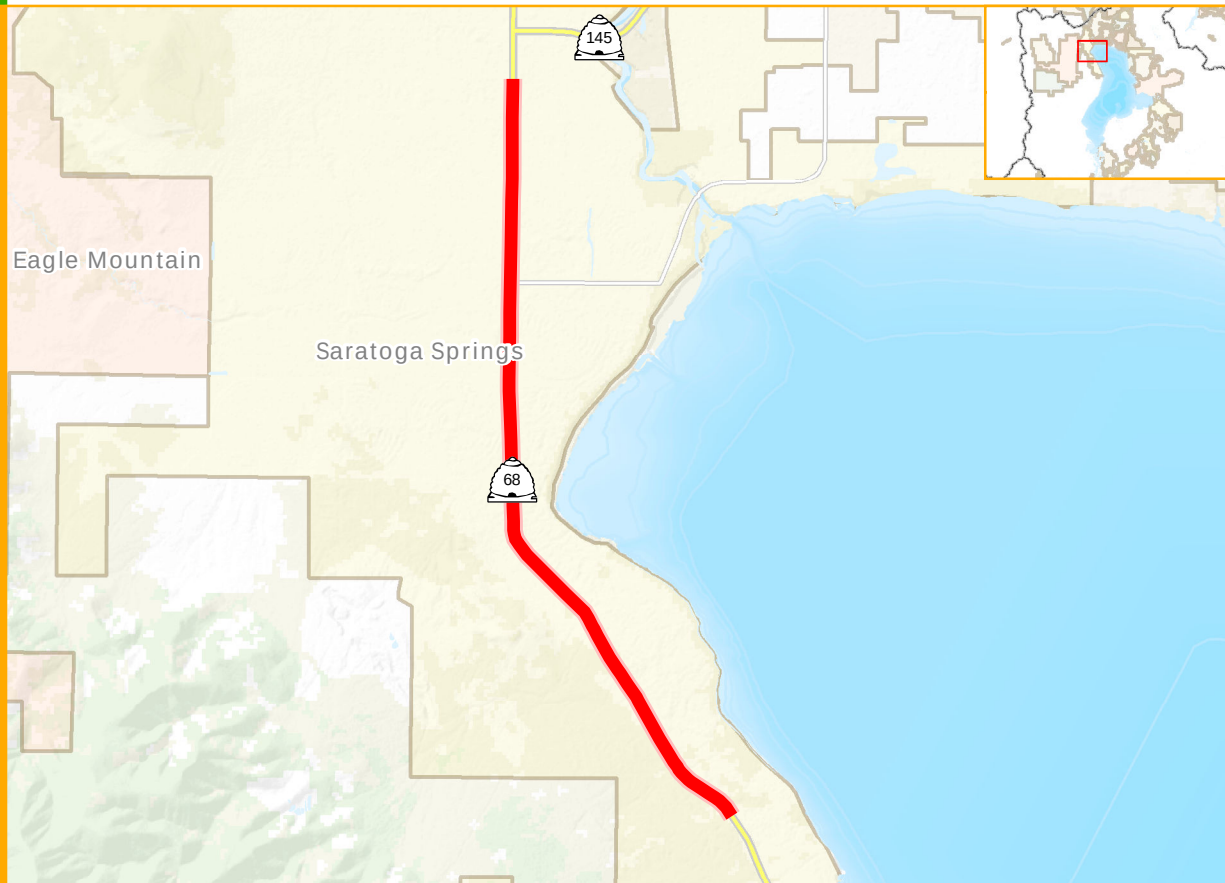
### PURPOSE & NEED

With the high growth of Saratoga Springs, the widening of Redwood RD through the city is needed. The current 2 lane rural configuration is insufficient for traffic and safety. UDOT has and continues to add turning lanes and right turn pockets prior to the widening project. No funding has been programmed to date for this project. In 2040, the daily vehicle count on this facility will range from 24,000 to 46,000.

Illustrative purpose only future study needed.



### PROJECT LOCATION MAP



### POTENTIAL IMPACTS



Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



Water Quality



Wetlands



Historic



4F



6F



Wildlife

#### IMPACT ANALYSIS

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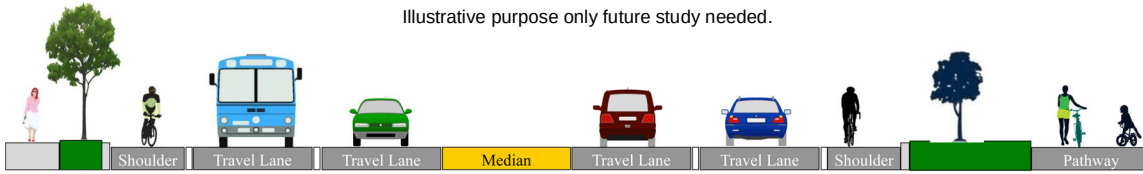
# PURPOSE & NEED

US 6 (Santaquin Main ST) is one of only two major east-west corridors around Utah Lake. It is the quickest means for residents of the communities of Eureka, Elberta, Goshen, and Genola to connect to I 15. Development in Santaquin and the listed communities has significantly increased traffic on US 6. The bottleneck along the corridor is at Santaquin 400 East due to the 5-leg intersection and poor access control to surrounding businesses and properties. The project will improve mobility and safety of the 400 East intersection as well as increase the capacity of US 6 along its most congested stretches through Santaquin. Portions of this project is currently underconstruction. In 2040, the daily vehicle count on this facility will range from 12,000 to 29,000.

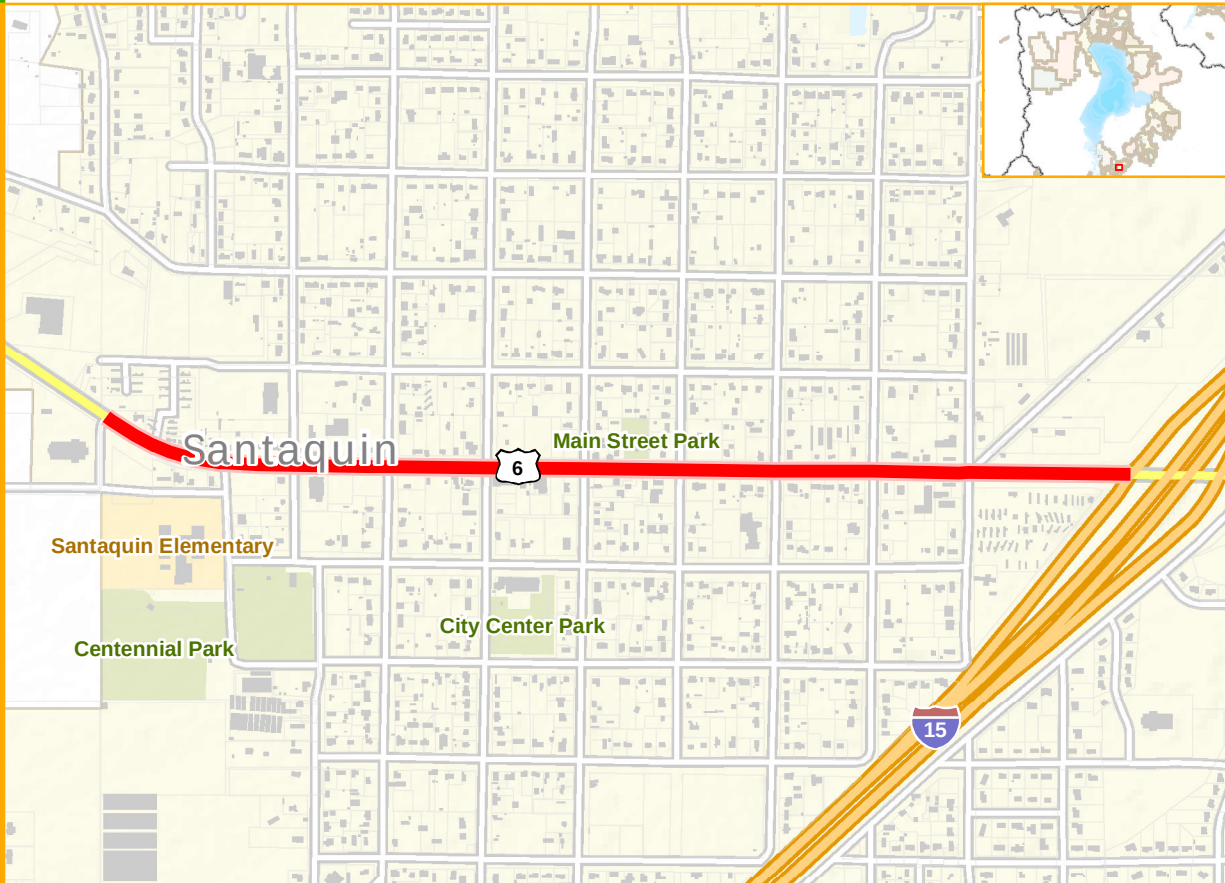
43

\$10.3  
(in millions)

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



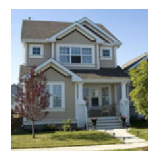
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



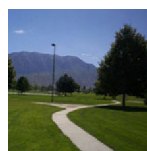
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

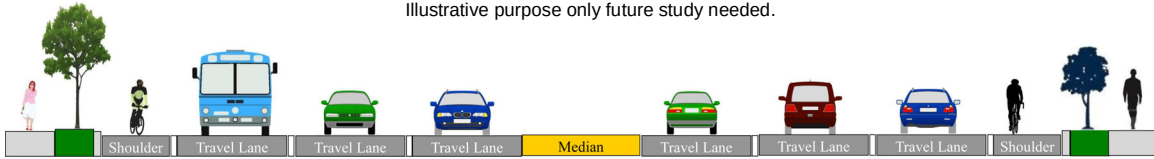
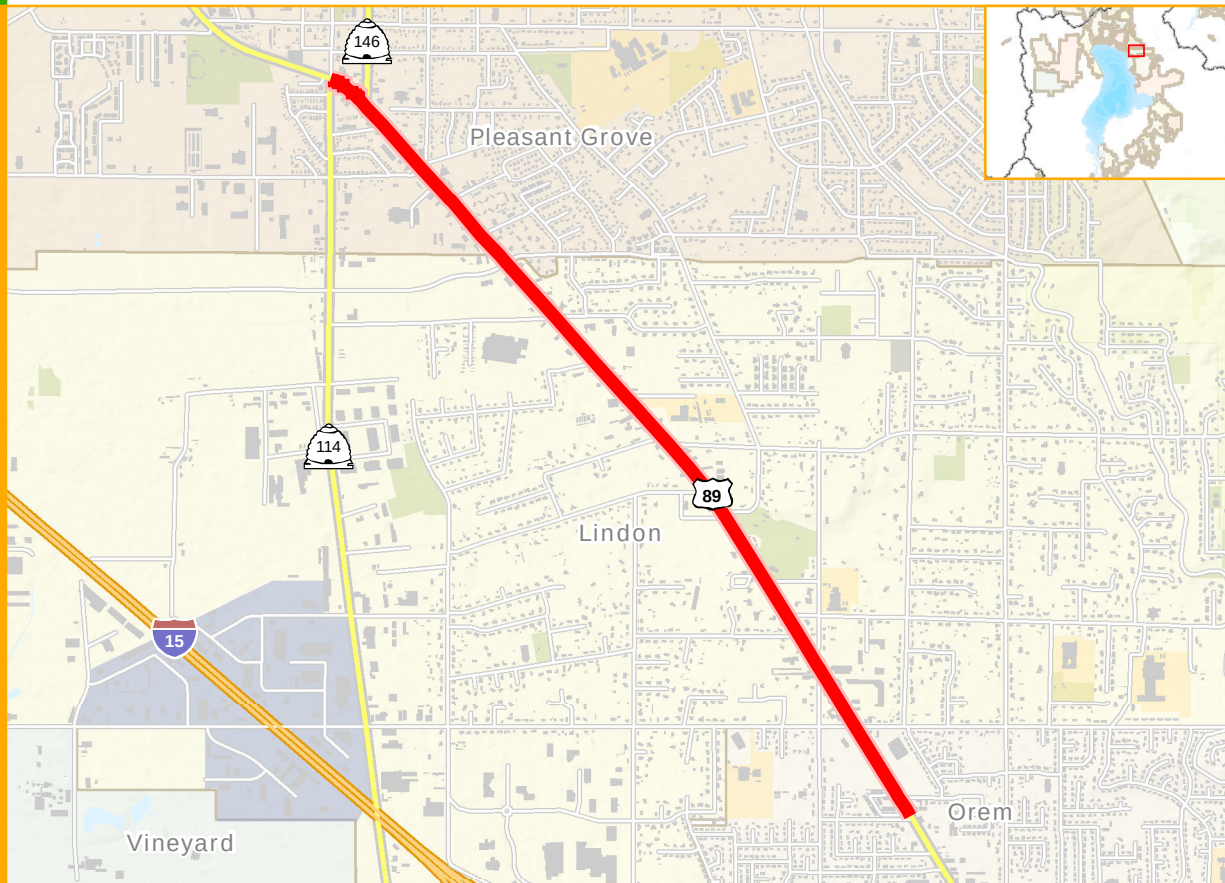
2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

**PURPOSE & NEED**

Anticipated population growth in Utah County will increase travel demand and add to the existing congestion on the State ST corridor, therefore, additional capacity will be required. Also, widening this stretch of State ST will create a contiguous 6 lane corridor through the area. In 2040, the daily vehicle count on this facility will range from 29,000 to 37,000.

Illustrative purpose only future study needed.

**PROJECT LOCATION MAP****POTENTIAL IMPACTS**

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

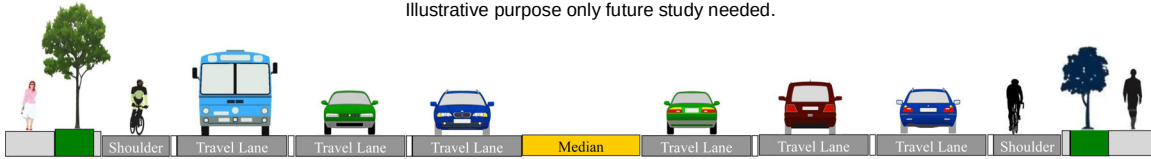
<http://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:1373>



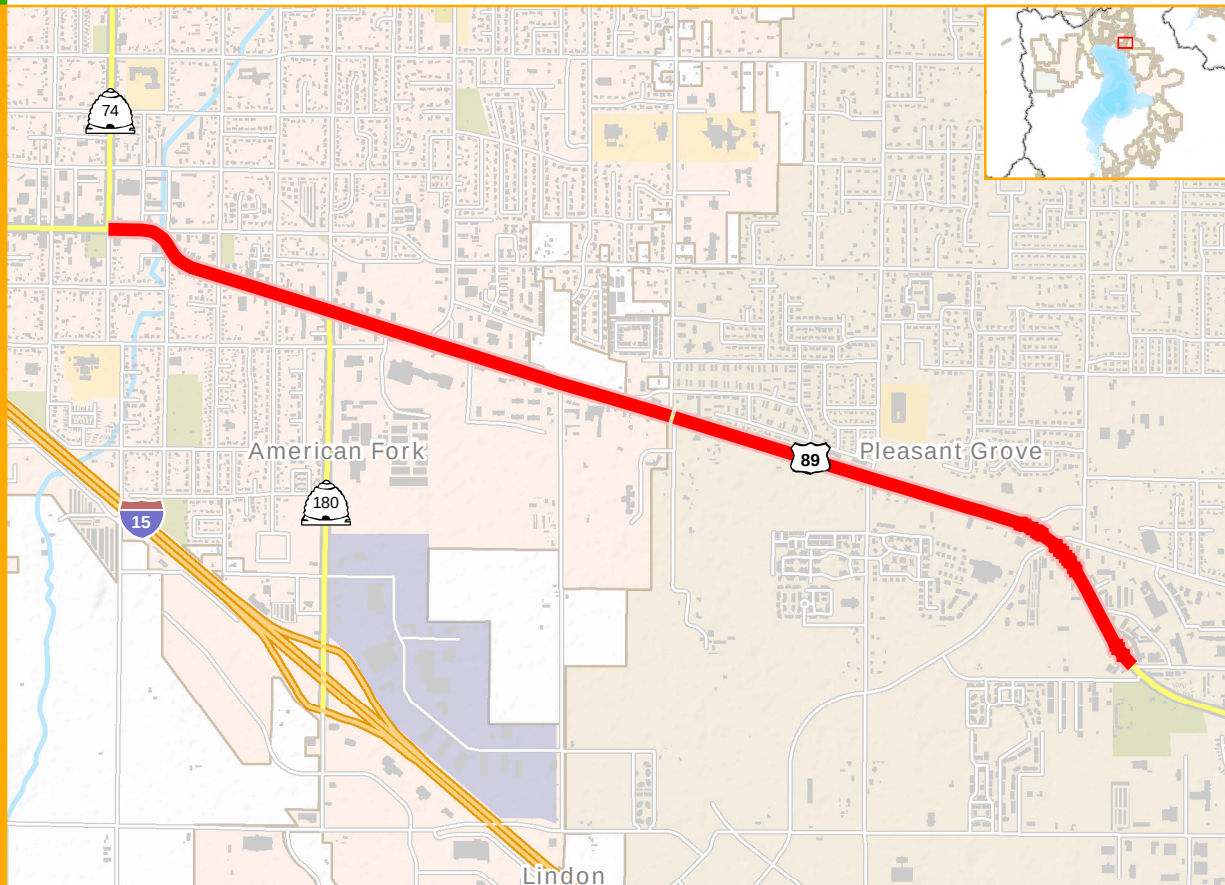
## PURPOSE & NEED

Anticipated population growth in Utah County will increase travel demand and add to the existing congestion on the State ST corridor, therefore, additional capacity will be required. Also, widening this stretch of State ST will create a contiguous 6 lane corridor through the area. In 2040, the daily vehicle count on this facility will range from 17,000 to 41,000.

Illustrative purpose only future study needed.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

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Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:1373>

45

\$26.7  
(in millions)

## State ST / US-89 - Pleasant Grove to American Fork

Pleasant Grove 200 South to American Fork 100 East

2040 METROPOLITAN  
TRANSPORTATION PLAN

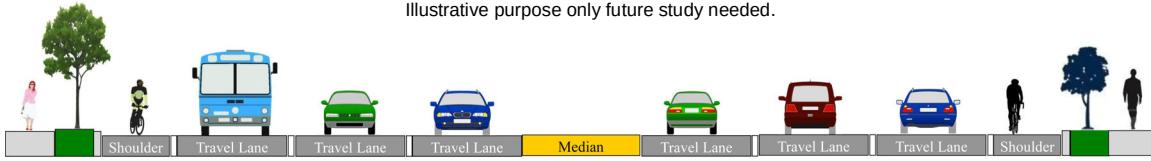
Date: 7/29/2011



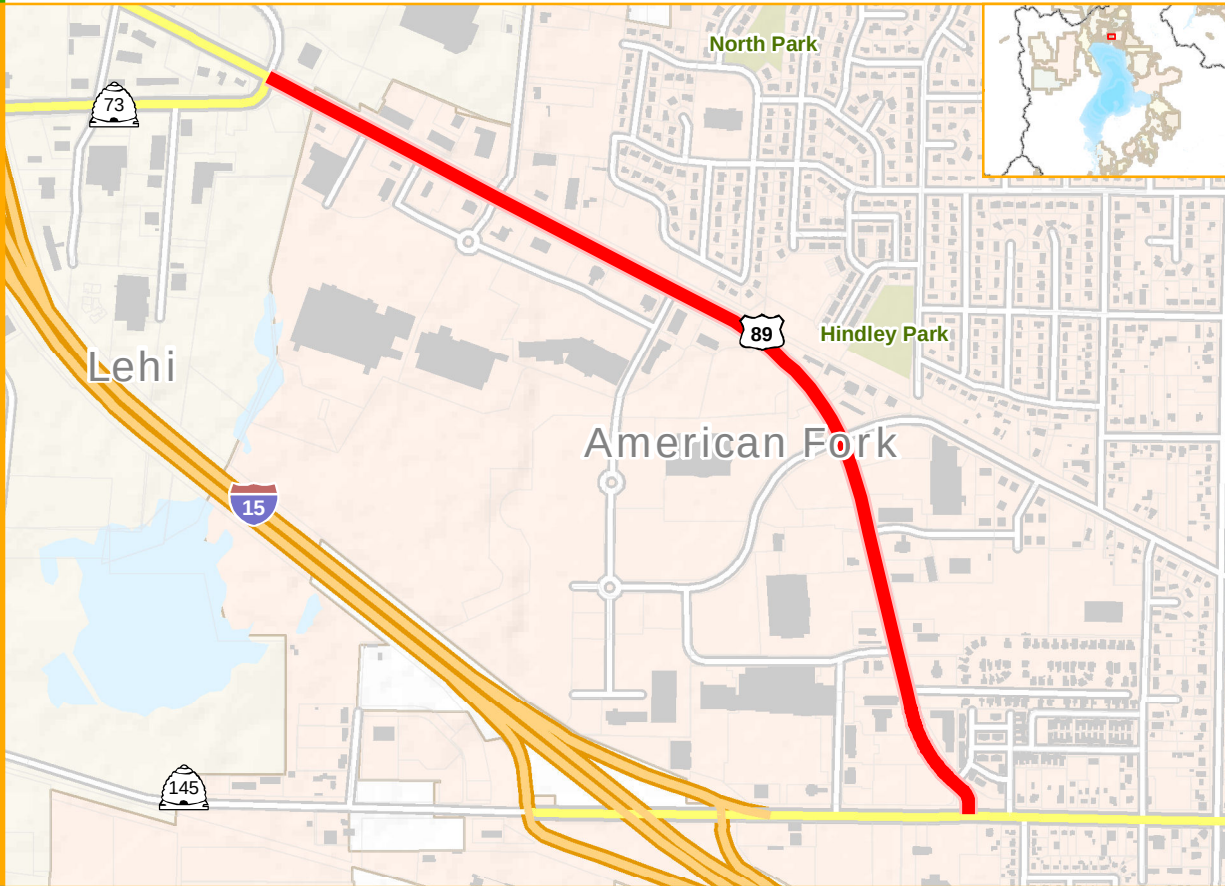
**PURPOSE & NEED**

The widening of State ST US 89 connecting American Fork and Lehi is needed due to the commercial growth in the area. This project would widen the road to 6 lanes between AF Main ST and Lehi Main ST to accommodate the traffic congestion and turning movements in the area accessing the commercial areas. UDOT is currently searching for funding to complete this project. In 2040, the daily vehicle count on this facility will range from 19,000 to 34,000.

Illustrative purpose only future study needed.



**PROJECT LOCATION MAP**



**POTENTIAL IMPACTS**



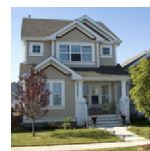
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



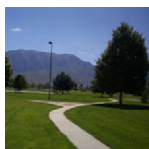
Water Quality



Wetlands



Historic



4F



6F



Wildlife

**IMPACT ANALYSIS**

Road projects will have both positive and negative impacts to social and physical environment.

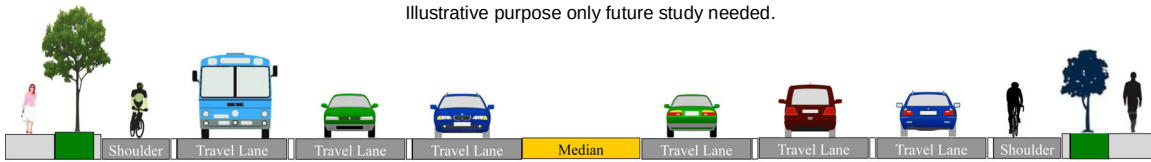
The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

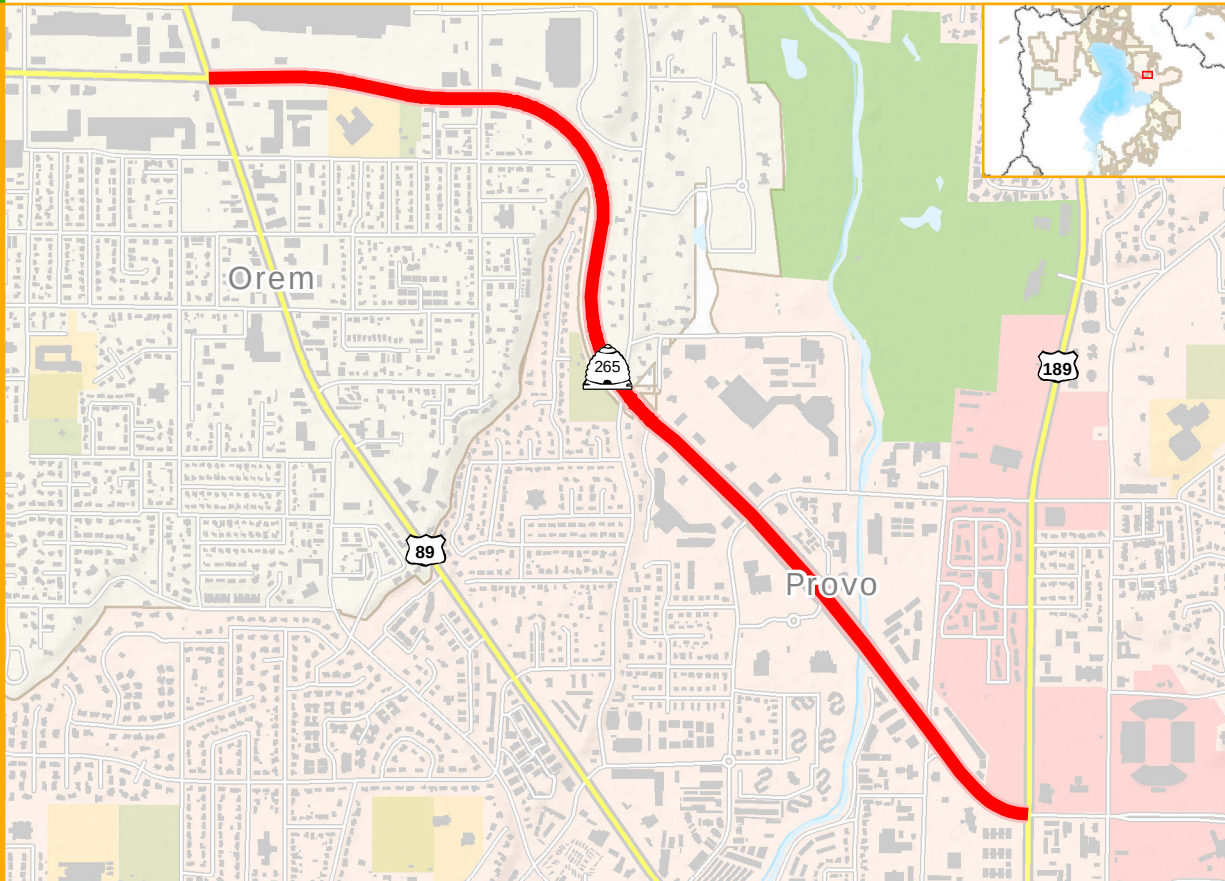
## PURPOSE & NEED

University PKWY is a major connection between Provo and Orem connecting to I-15. The roadway has some of the highest congestion in the region with the State ST/University PKWY intersection being one of the highest traveled intersections in the state. Through most of Orem the roadway cross section is 6 lanes with 4 lanes from University Mall through Provo. This project would carry that cross section into Provo. Even with a full 6 lane section corridor wide, this roadway will be congested in the future. A Bus Rapid Transit (BRT) system is proposed as a part of the corridor to help reduce congestion during peak travel times. Environmental work was done for both the widening project and the BRT project which also includes a new Express Lane interchange at I-15/Orem 800 South with a direct connection to UVU. In 2040, the daily vehicle count on this facility will range from 52,000 to 61,000.

Illustrative purpose only future study needed.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.provo-oremrapidtransit.info/index.htm>

47

\$34.1  
(in millions)

**University PKWY / HWY-265 - Orem to Provo**  
State ST, Orem to University AVE, Provo

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011



\$28.7  
(in millions)

## Westside Connector RD

I-15 / University AVE interchange to Provo Center ST

2040 METROPOLITAN  
TRANSPORTATION PLAN

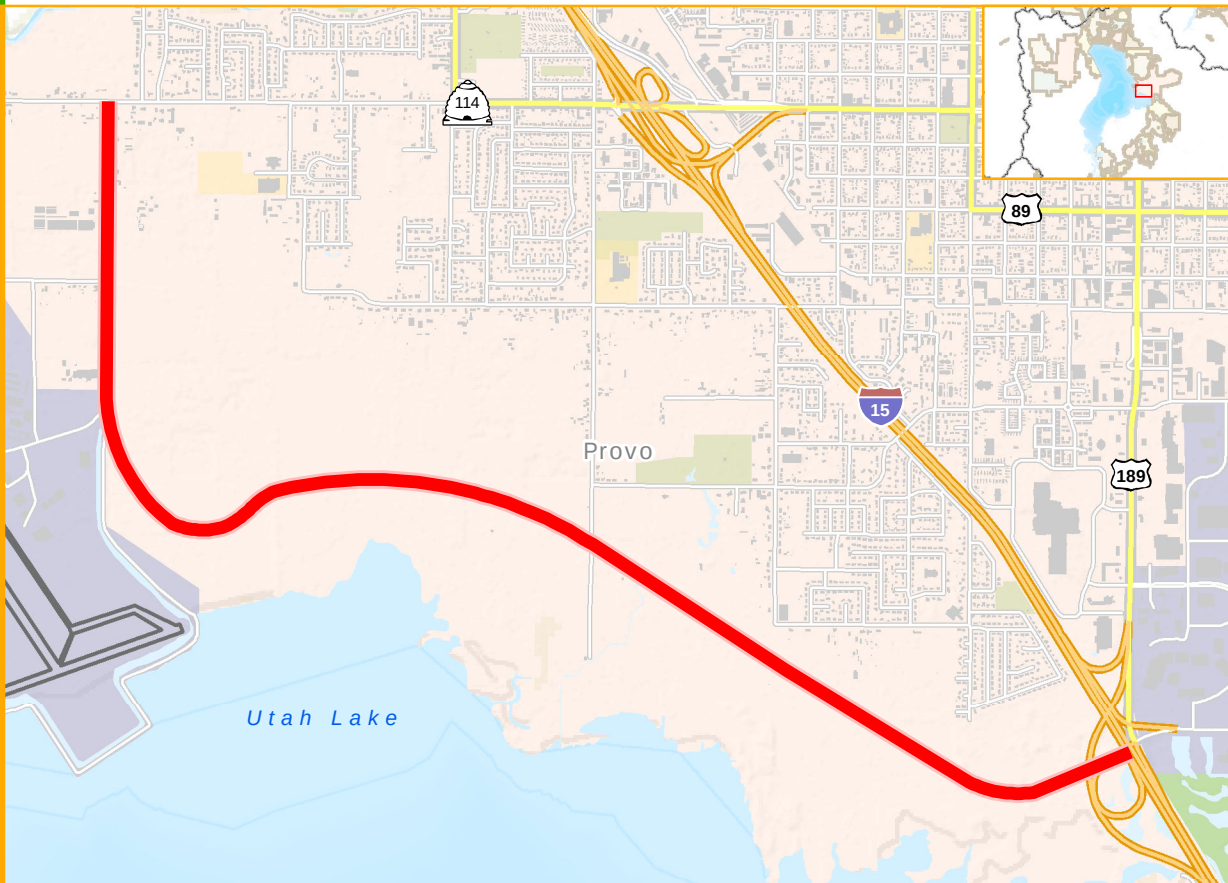
Date: 7/29/2011

### PURPOSE & NEED

The purpose of the Westside Connector project is to improve roadway system linkage in the southwest area between the Provo Airport and the I-15/University AVE interchange. The project will provide a connection to the existing arterial and freeway transportation network to support planned residential development and land use changes in southwest Provo, support planned improvements at the airport, and provide a more direct roadway link for the residential areas while supporting the continued economic viability of Provo. The environmental work for the project is near complete. No funding has been programmed for constructing this project. The city is working to secure these funds. In 2040, the daily vehicle count on this facility will range from 1,000 to 9,000.

Please visit the road project website for more detailed information regarding roadway cross section.

### PROJECT LOCATION MAP



### POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

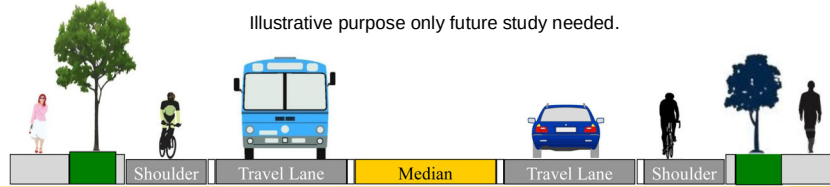
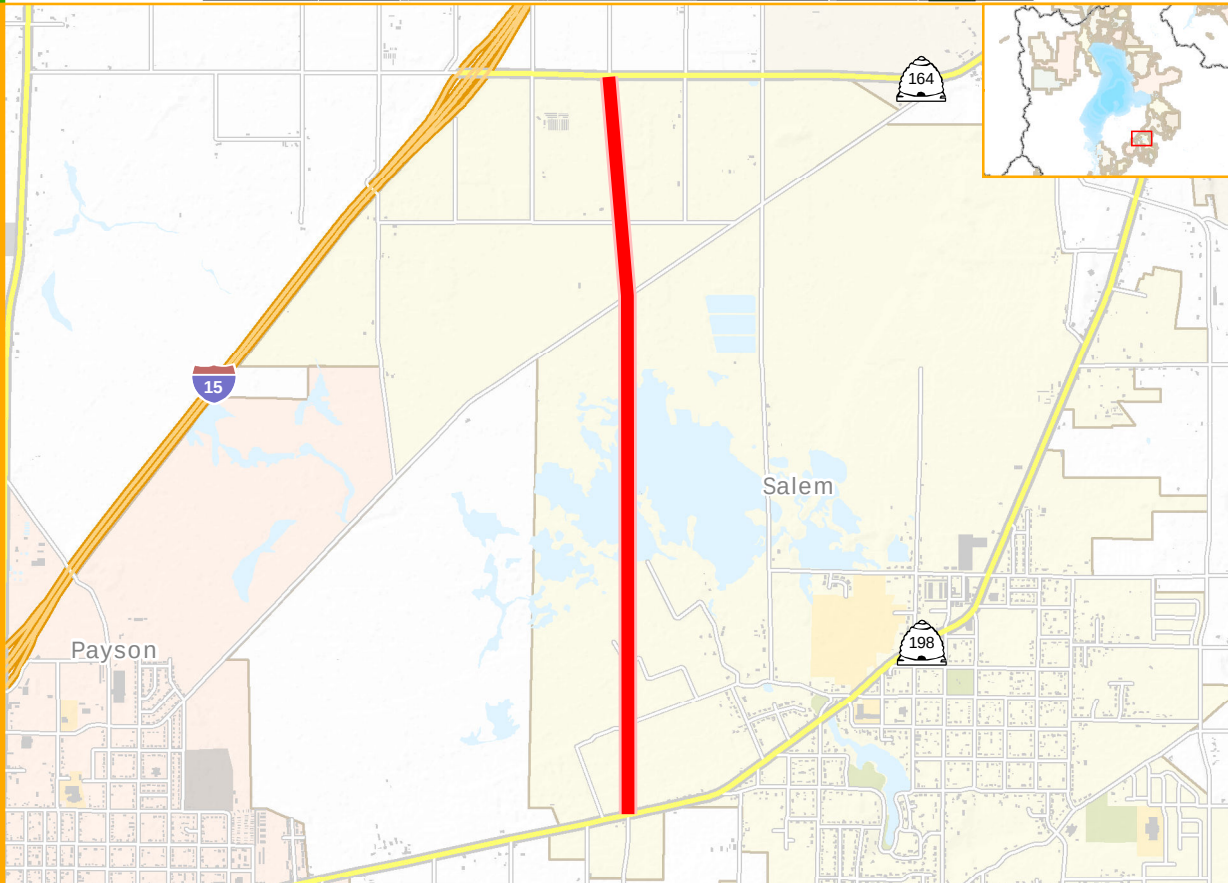
<http://provowestsideconnector.com/>



**PURPOSE & NEED**

Currently, most congestion is manageable in the southern Utah County area. The main traffic problem is connectivity. Most of the main highways parallel I-15 and have limited connection to it. The Elk Ridge DR extension would add more connectivity to the area. Traffic from the south valley that traverses Spanish Fork Main ST and Payson Main ST will have another option. This project is currently in the environmental work stage. Construction is funded and could start as early as the Spring of 2012. In 2040, the daily vehicle count on this facility will range from 9,000 to 11,000.

Illustrative purpose only future study needed.

**PROJECT LOCATION MAP****POTENTIAL IMPACTS**

Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



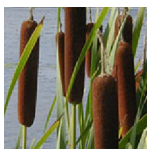
EPA Sites



Floodplain



Water Quality



Wetlands



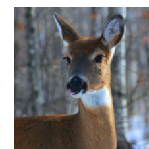
Historic



4F



6F



Wildlife

**IMPACT ANALYSIS**

Road projects will have both positive and negative impacts to social and physical environment.

The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

\$78.0  
(in millions)

## Lehi 2300 West

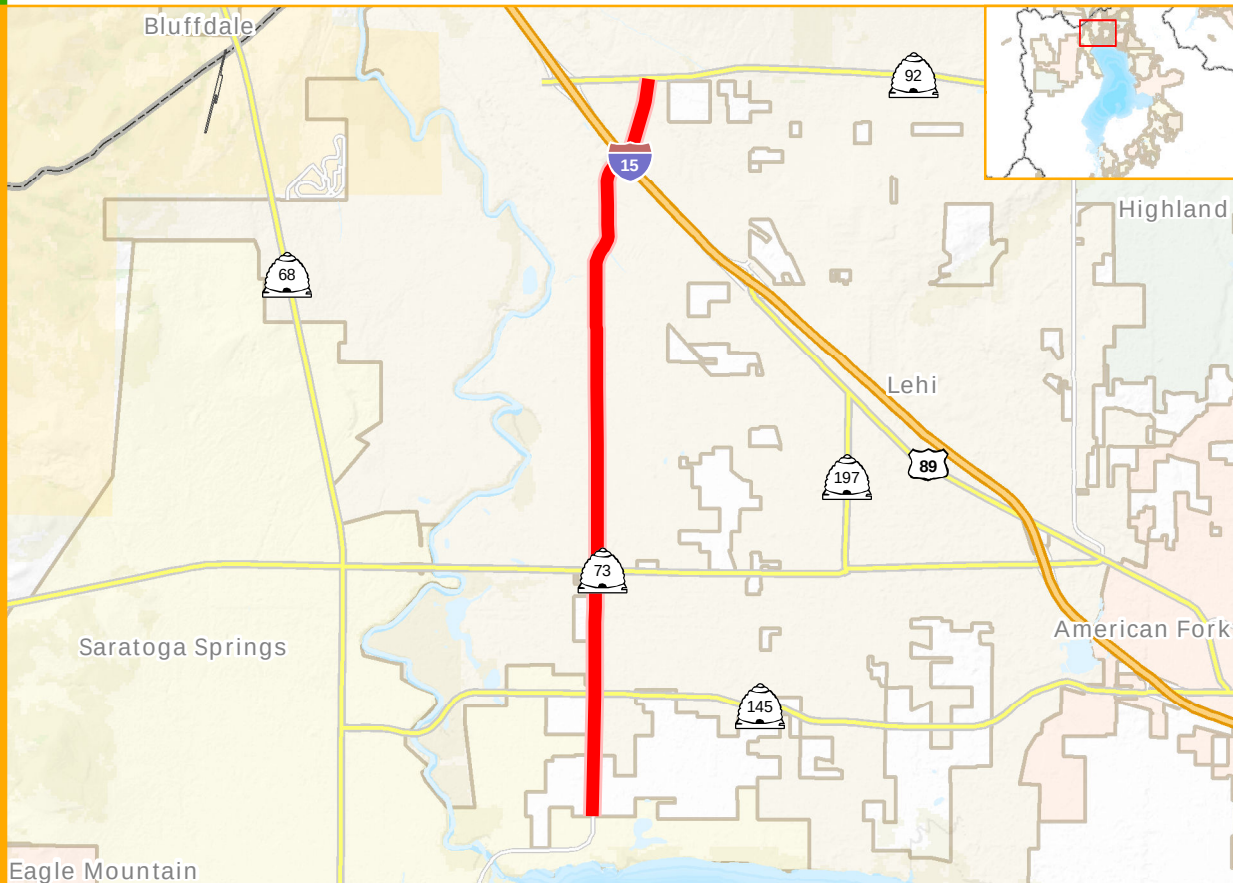
HWY-92 to Pony Express PKWY

### PURPOSE & NEED

Lehi 2300 West would provide connectivity on 2300 West between HWY 92 and Lehi 1900 South in accordance with federal, state, regional, and Lehi City transportation plans. It would create a major thoroughfare traversing the city of Lehi from north to south. It will be designed to provide adequate roadway capacity to support future travel demand while correcting roadway geometric and safety deficiencies currently on already built portions of the road. Environmental work is complete and the project should start construction by 2013. Segments of the project might be constructed at a later date. In 2040, the daily vehicle count on this facility will range from 5,000 to 38,000.

Please visit the road project website for more detailed information regarding roadway cross section.

### PROJECT LOCATION MAP



### POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.udot.utah.gov/Lehi2300westea/>

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

\$49.5  
(in millions)

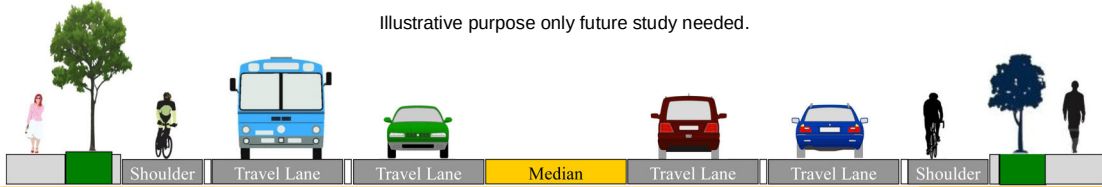
# Meadows Connection RD

AF 200 South to State ST

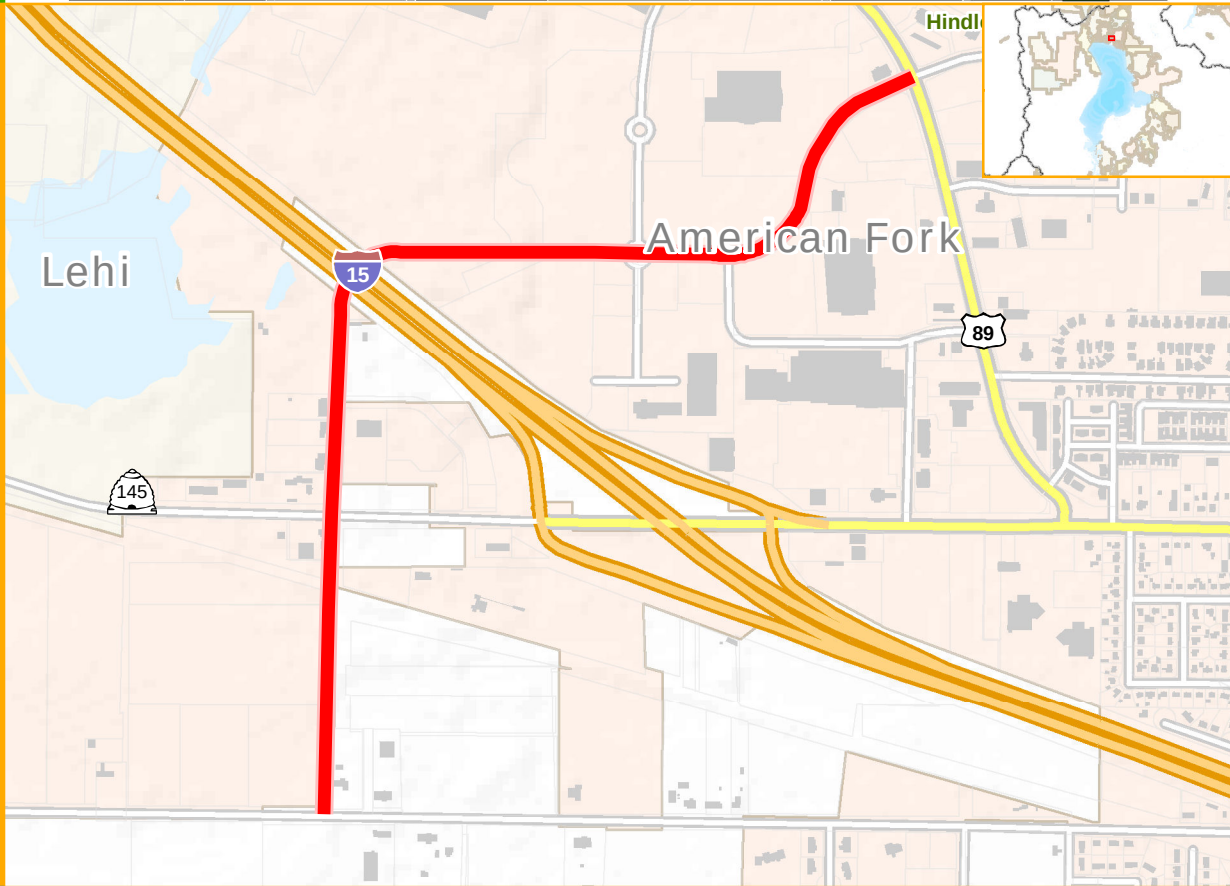
## PURPOSE & NEED

This connection will connect the proposed widening of Pacific AVE westward over I-15 connecting to Pioneering Crossing and the new Front Runner Commuter Rail Station. It is designed to help relieve congestion on American Fork Main ST through downtown and at the I-15 interchange. The road also creates more connectivity though The Meadows shopping district. This corridor would most likely be funded by local means. Construction funding has not yet been identified. In 2040, the daily vehicle count on this facility will range from 3,000 to 5,000.

Illustrative purpose only future study needed.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS



Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



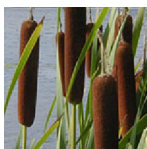
EPA Sites



Floodplain



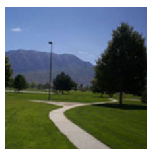
Water Quality



Wetlands



Historic



4F



6F



Wildlife

### IMPACT ANALYSIS

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The matrix to the side highlights in color some of the potential impacts as a result of an upgrade or construction of the road project.

For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.



# PURPOSE & NEED

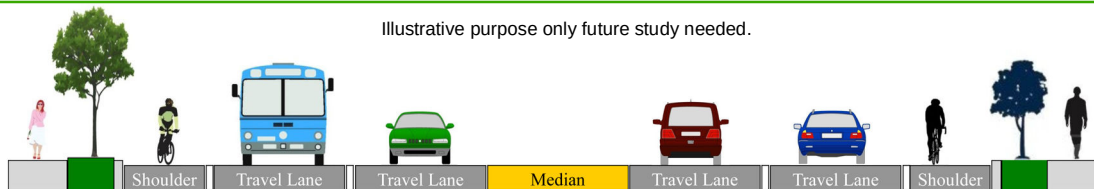
Orem 1600 North is a vital corridor traversing the north end of Orem. It is the only east/west corridor with a freeway interchange in the urban area with only two travel lanes. It is currently at capacity with future volumes projected to increase. The corridor currently has no construction funding identified and will most likely be funded by local funds. In 2040, the daily vehicle count on this facility will range from 27,000 to 32,000.

69

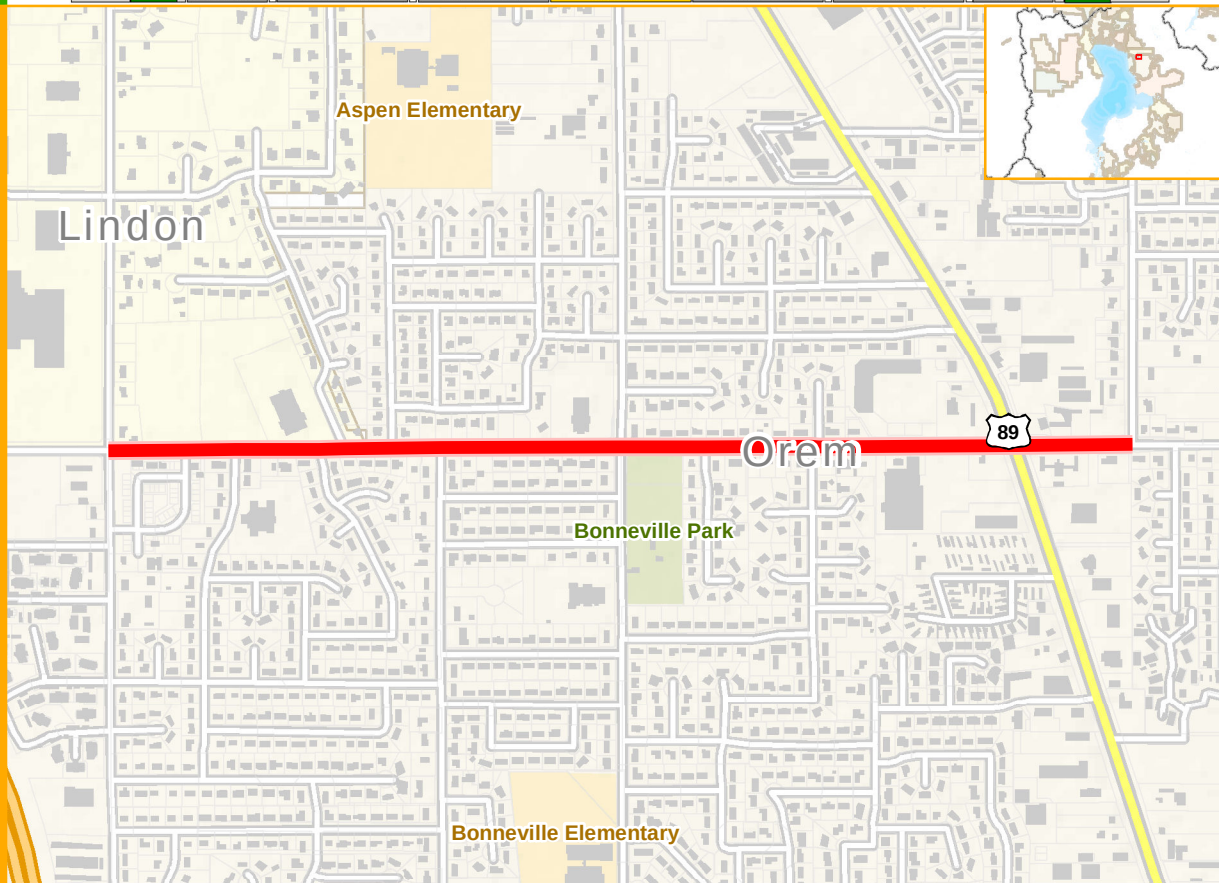
\$6.3  
(in millions)

Orem 1600 North  
1200 West to Orem 400 West

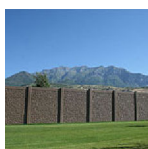
Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



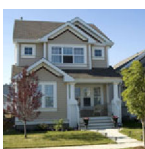
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



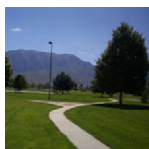
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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For more information please see the Impact & Benefits section of the 2040 Metropolitan Transportation Plan.

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

# PURPOSE & NEED

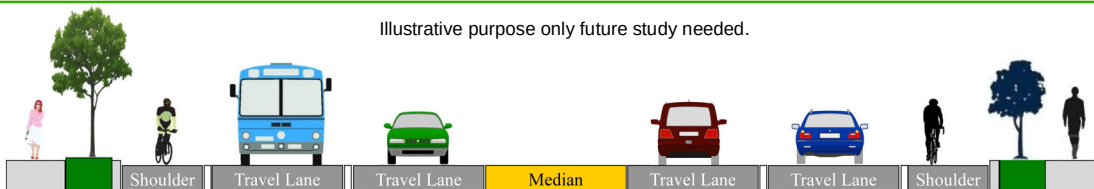
It is projected that Orem Center ST will need to be a 4 lane configuration with the completion of the I-15 CORE reconstruction project and the widening of Geneva RD. Both these projects will construct the majority of this project as part of the approaches to each facility. A small section will be completed by the city of Orem. Construction should be complete by 2013. In 2040, the daily vehicle count on this facility will range from 13,000 to 20,000.

70

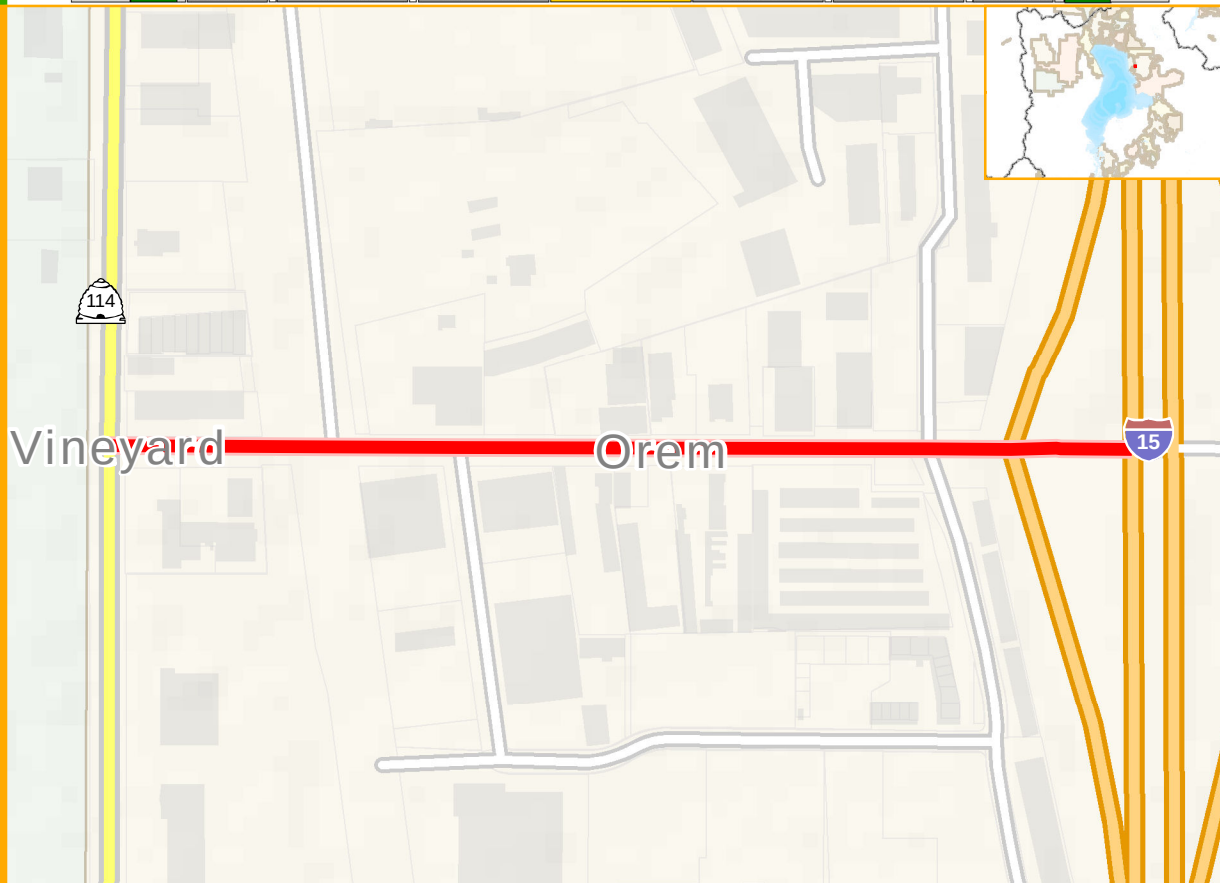
\$2.8  
(in millions)

## Orem Center ST Geneva RD to I-15 FWY

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



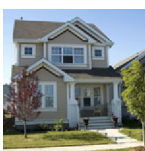
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



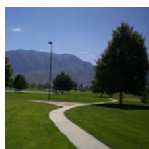
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

# PURPOSE & NEED

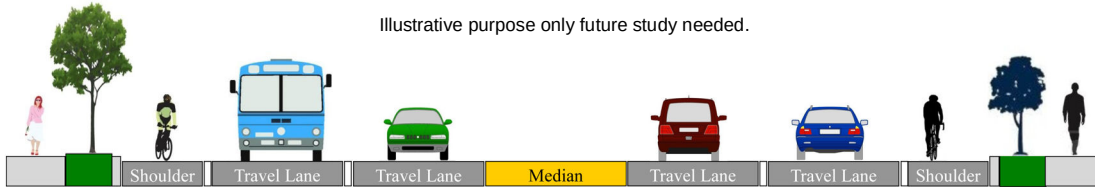
As the area around the I-15/Pleasant Grove Interchange develops and grows, Pleasant Grove BLVD will need to be widened. It is proposed that the current 2 lane section of the corridor be widened to 4. The 4 lane section near and over the interchange could be widened to 6. Most of this work will most likely occur by private development widening the road as a part of new development. Public funds will most likely be acquired through local means with some state funds near the interchange being made available. In 2040, the daily vehicle count on this facility will range from 8,000 to 42,000.

71

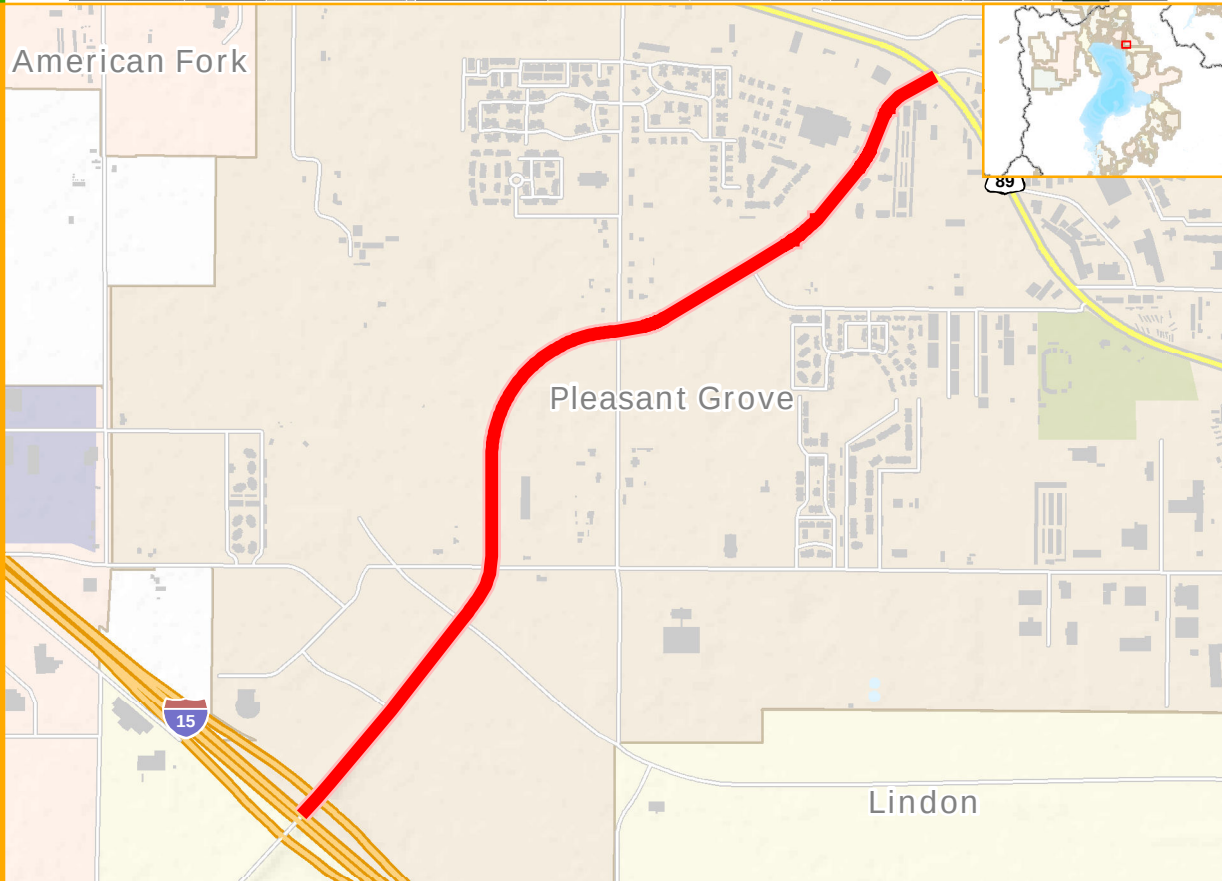
\$10.9  
(in millions)

# Pleasant Grove BLVD I-15 Fwy to State ST

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



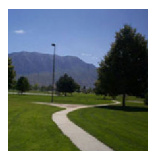
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011



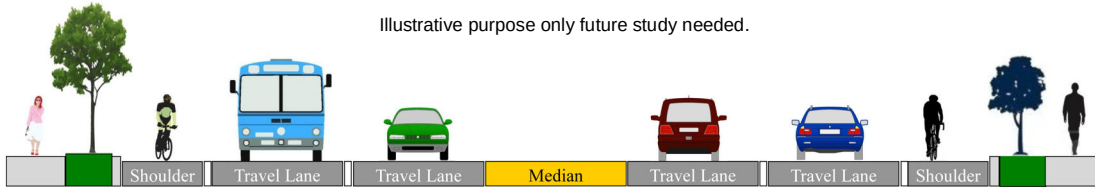
# PURPOSE & NEED

Many factors on the west side of Provo will come together to necessitate the widening of Provo Center ST from 2 lanes to 4. This includes multiple planned residential and mix use developments west of I-15, the expansion of the Provo Municipal Airport, the creation of the Northwest and Westside connector roads, and the reconstruction and reconfiguration of the I-15/Provo Center ST interchange. The new corridors coupled with road widening will create better connectivity in the area and allow for better access by emergency services. The I-15 CORE reconstruction project will construct the approaches to the new interchange on Provo Center ST. The remainder of the corridor will most likely be funded by local means. In 2040, the daily vehicle count on this facility will range from 5,000 to 34,000.

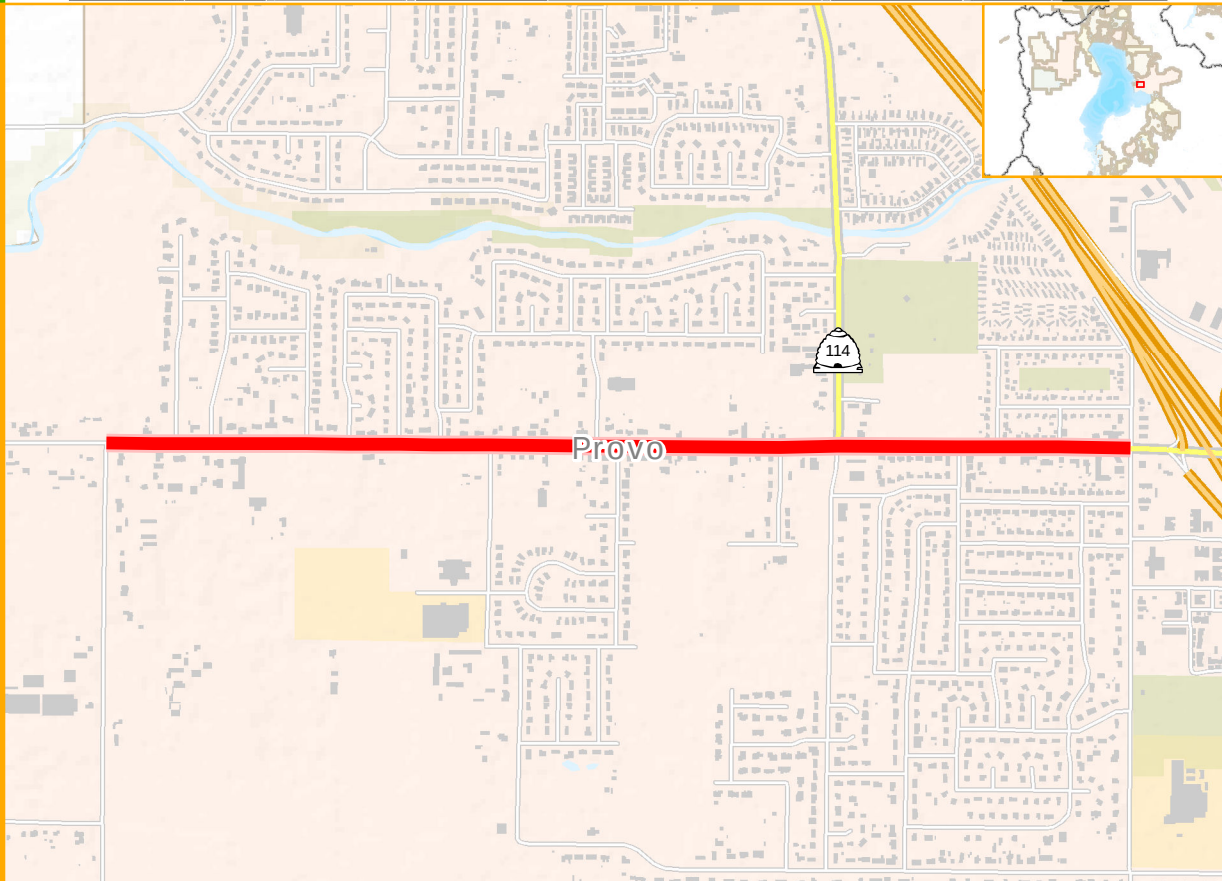
72

\$11.5  
(in millions)

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# Provo Center ST / HWY-114 - Provo

I-15 Fwy to Provo 3110 West

# POTENTIAL IMPACTS



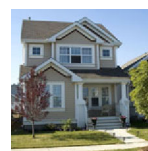
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



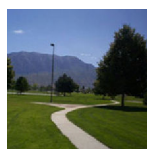
Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

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2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

\$34.7  
(in millions)

## North West Connector RD - Provo

Westside Connector RD to Geneva RD

2040 METROPOLITAN  
TRANSPORTATION PLAN

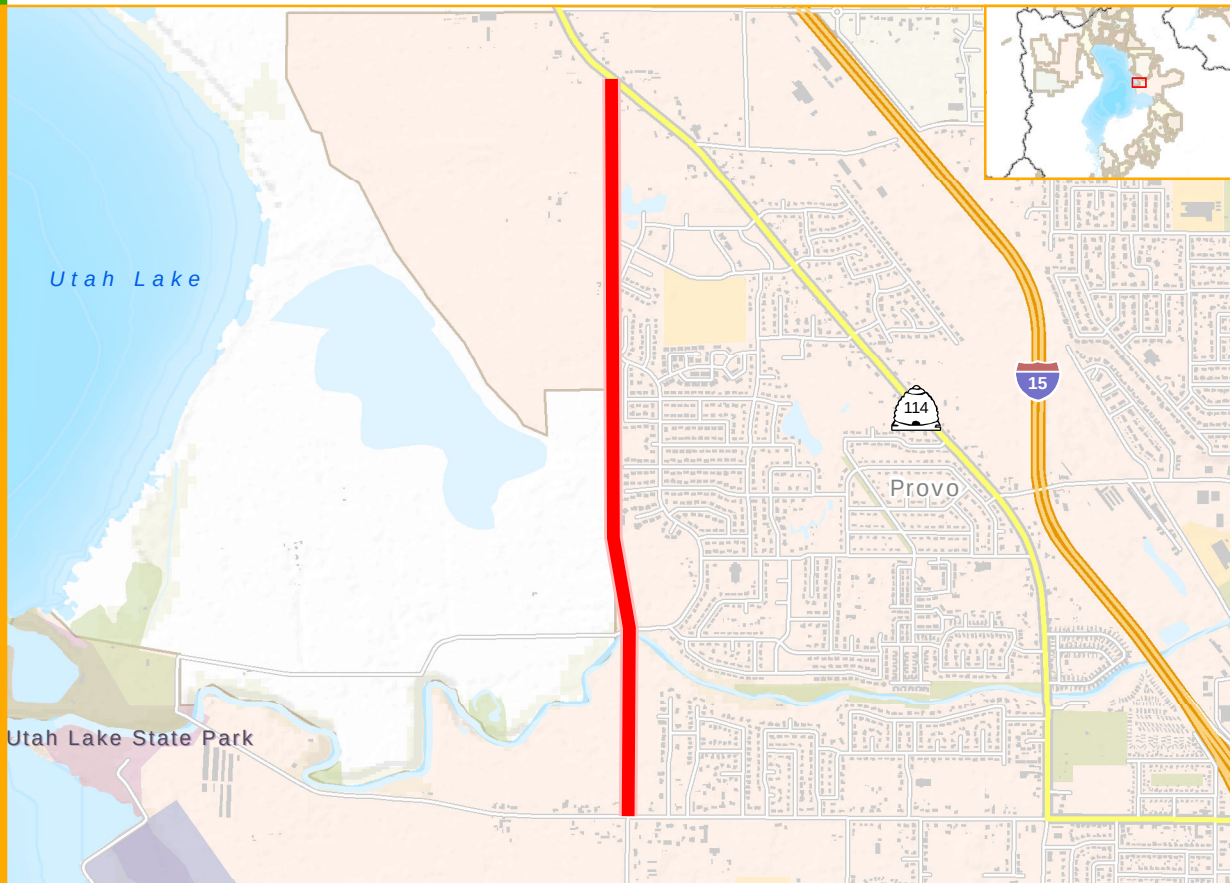
Date: 7/29/2011

### PURPOSE & NEED

The Northwest Connector is a facility proposed by the city of Provo to connect Geneva RD in Orem to the Provo Municipal Airport to I-15 at University AVE. Accentually creating a belt route in west Provo and most likely negating the need to widen Geneva RD through Provo. The corridor will probably be funded by local means. Currently an environmental and design study is being conducted with the city searching for construction funds. In 2040, the daily vehicle count on this facility will range from 3,000 to 6,000.

Please visit the road project website for more detailed information regarding roadway cross section.

### PROJECT LOCATION MAP



### POTENTIAL IMPACTS

This project has an associated Environmental Impact Statement.

An Environmental Impact Statement (EIS) is a document that describes the positive and negative environmental effects of proposed agency action, as required by law.

Please visit the road project website for more detailed information regarding social and environmental impacts.

<http://www.provonorthwestconnector.com/>

# PURPOSE & NEED

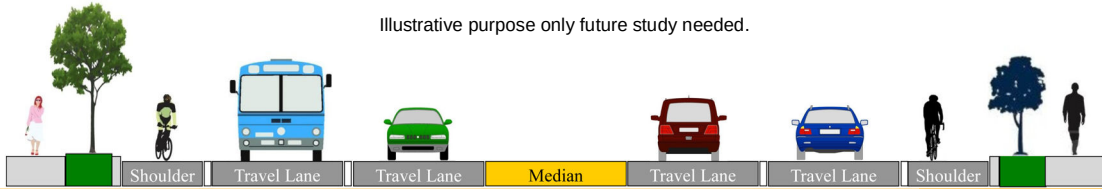
Spanish Fork Center ST currently has a bottleneck in a 5 block area just west of US-6. With high growth planned west of US-6 and a future new interchange proposed at I-15 and Spanish Fork Center ST, traffic will only increase. It is proposed to widen the 2 lane section to 4. This could require the purchase and removal of some residential and commercial properties. This project will most likely be funded by local means, with some state funds being used near US-6. No studies have been done or funding secured for this project. In 2040, the daily vehicle count on this facility will range from 7,000 to 19,000.

74

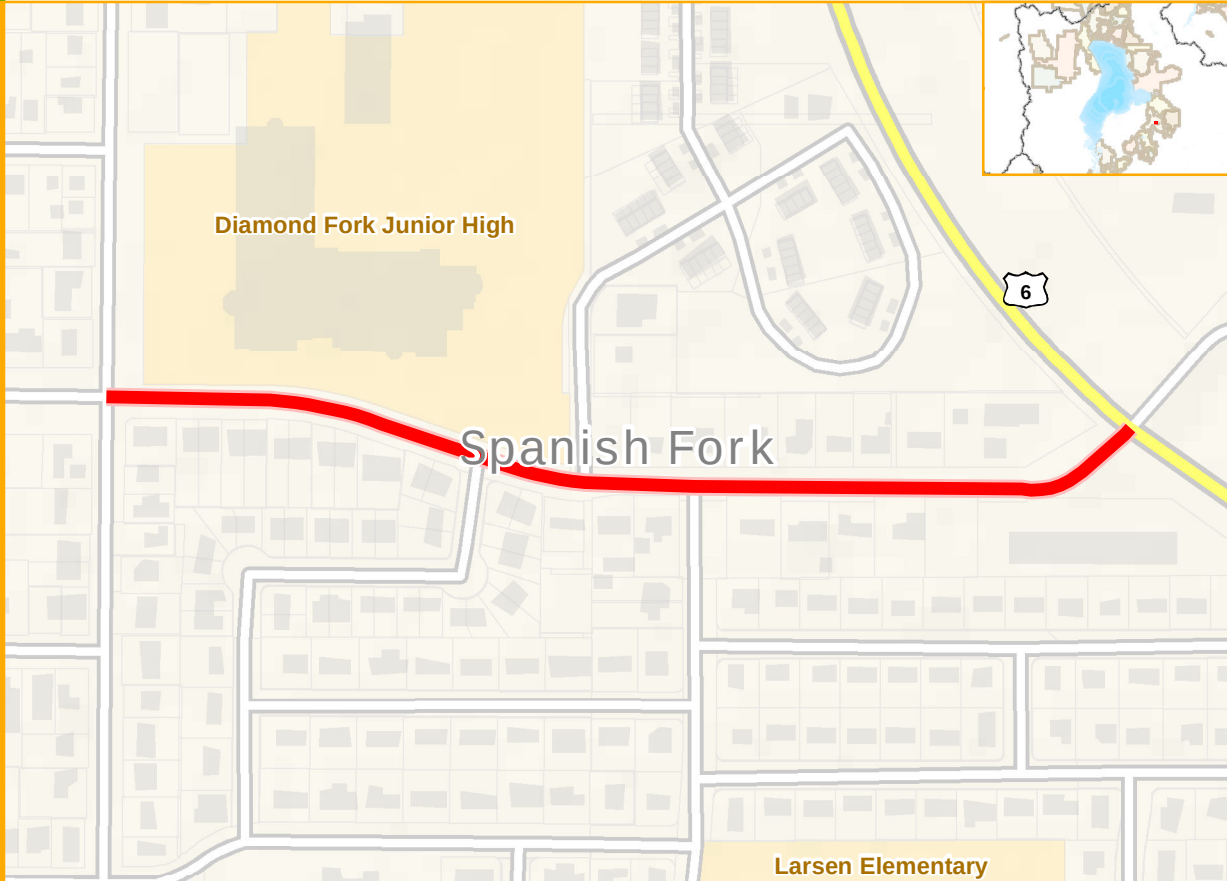
\$1.6  
(in millions)

## Spanish Fork Center ST SF 900 East to US-6

Illustrative purpose only future study needed.



# PROJECT LOCATION MAP



# POTENTIAL IMPACTS



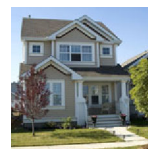
Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



Water Quality



Wetlands



Historic



4F



6F



Wildlife

## IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

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2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011



## PURPOSE & NEED

Springville 1400 North is the north entrance to Springville from the I-15 freeway and the urban areas to the north. Currently the corridor crosses two railroads on bridge structures and has very limited commercial access, making it an ideal commuter corridor. With the recent widening of Springville 400 South, this corridor has seen some reduction in traffic. Future projections do show a need to widen this 2 lane facility to 4. No environmental work has been completed to date and UDOT is currently searching for funding for this project. In 2040, the daily vehicle count on this facility will range from 14,000 to 28,000.

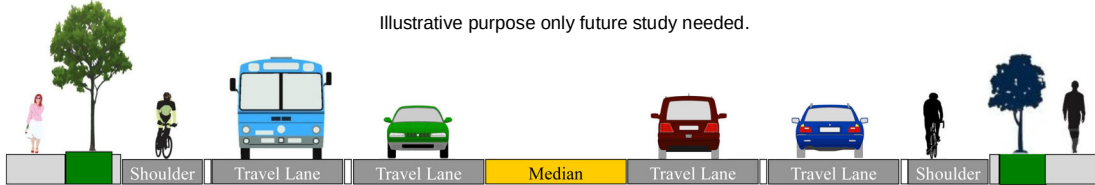
# 75

\$48.7  
(in millions)

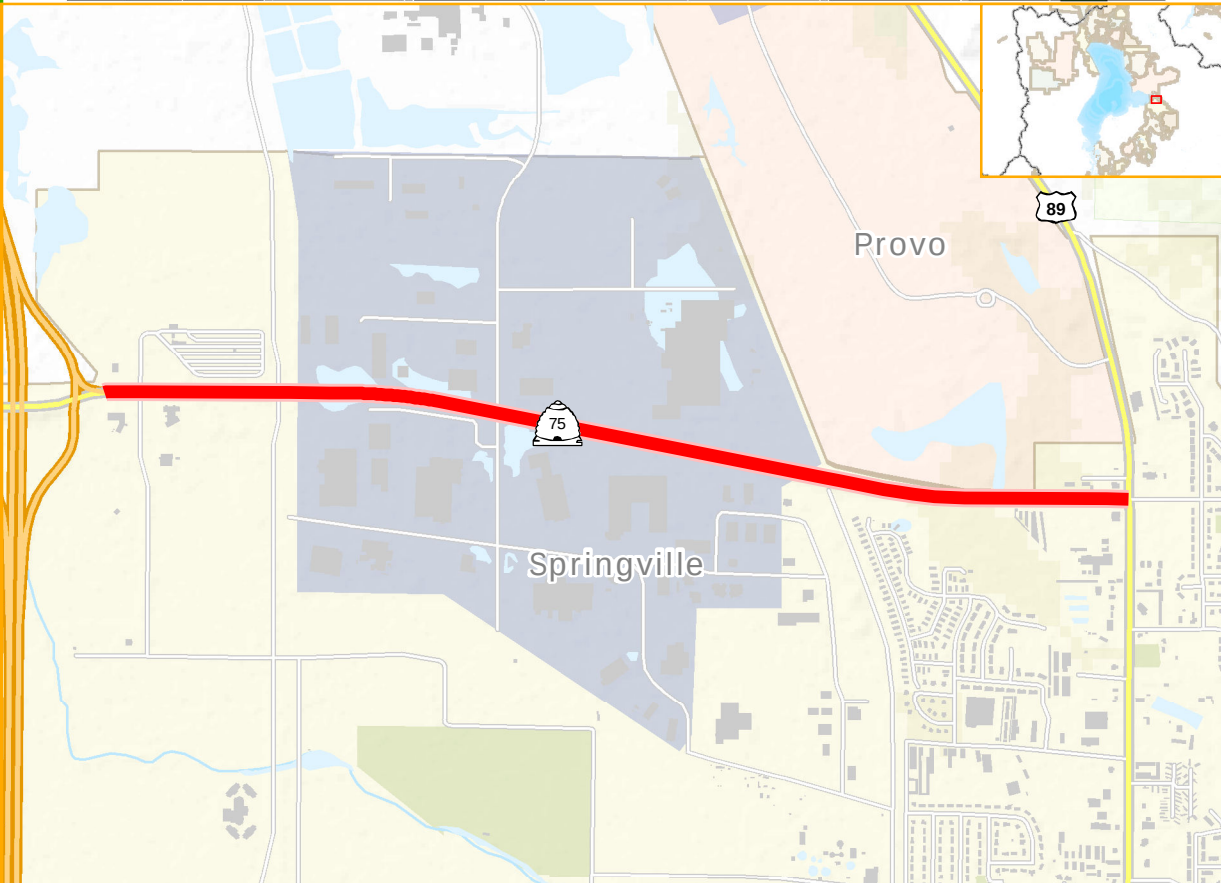
## Springville 1400 North / HWY-75

I-15 Fwy to Springville Main St

Illustrative purpose only future study needed.



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS



Noise



School



Land Use



Relocation



Visual



Farmland



Geologic



EPA Sites



Floodplain



Water Quality



Wetlands



Historic



4F



6F



Wildlife

### IMPACT ANALYSIS

Road projects will have both positive and negative impacts to social and physical environment.

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2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/29/2011

## PURPOSE & NEED

The Wasatch Front, and in particular Utah and Salt Lake Counties, are experiencing rapid growth. The population of these two counties comprises approximately 57 percent of the state's total population and over 80 percent of all jobs. Future increases in both population and employment growth rates are expected to be more than twice those of the nation for the next three decades (GOPB, 2005b).

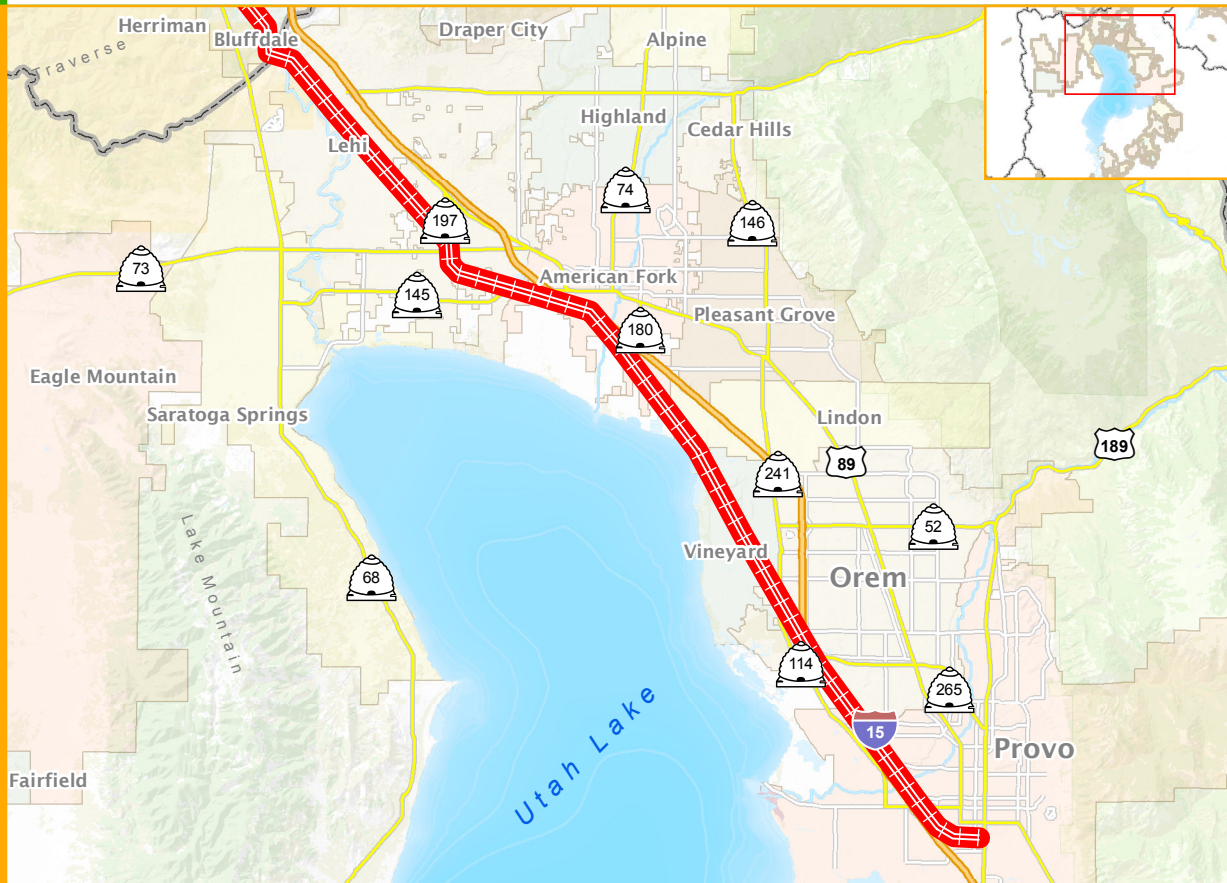
Increasingly, development patterns in the two-county study area are dispersed with a greater number of activity and employment centers along the corridor. An increase in interregional travel patterns is also creating additional travel demand for both roadways and transit between the two counties, which are linked by only one highway and one major arterial. By 2030, traffic volumes are forecast to more than double and would exceed the capacity of existing and planned roadway infrastructure used by both personal vehicles and bus transit services. Moreover, physical constraints and topography at the Point of the Mountain near the Utah-Salt Lake County line limit opportunities to expand the existing roadway infrastructure.

Forecasted traffic congestion is expected to be severe, commute periods are expected to increase in duration, and frustrated commuters would likely try to use alternative parallel roadways. The expansion of the commuter rail service on its own right-of-way has strong political support and is a vital component in the development of a multimodal transportation system in the region largely because operation would be more reliable than highways and major arterials.

As such, the purpose of the Proposed Action is to meet the following objectives:

- Facilitate the safe and efficient movement of people within the corridor between Provo and Salt Lake City through 2030;
- Provide efficient, high-capacity regional transit service in the project corridor;
- Enhance economic potential in the corridor by improving access to existing and planned employment and activity centers; and,
- Support regional plans and policies that call for the provision of a balanced transportation system.

## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

### Environmental Study Report (ESR)

UTA has prepared this Environmental Study Report (ESR) to help decision makers and the public consider the benefits and impacts of the Proposed Action to develop a new commuter rail corridor from Provo City to downtown Salt Lake City.

The ESR helped UTA and its partners and shareholders further define the Proposed Action. The preparation of the ESR required their coordination on preliminary engineering, environmental impact assessment, and public involvement activities. In this way, UTA and its stakeholders will be able to collaboratively determine how the Proposed Action can be developed in a manner that is cost-effective, yet provides the greatest benefits and minimizes adverse impacts.

The ESR documents the purpose and need for the project and describes the alternatives evaluated. It discloses the anticipated beneficial and adverse impacts of the Proposed Action and defines appropriate mitigation measures. This document also summarizes the transportation benefits and effects of the Proposed Action, as well as potential environmental impacts in the following areas:

- Land Use;
- Social and Economic Impacts, including Displacements and Relocations;
- Air Quality;
- Noise;
- Vibration;
- Water Resources (Surface Water, Floodplains, Groundwater);
- Biological Resources (Wetlands, Vegetation, Wildlife and Fisheries, Sensitive Species);
- Hazardous Materials and Hazardous Waste
- Historical, Archaeological, and Paleontological Sites.



2030 Ridership: 11,928

[www.rideuta.com](http://www.rideuta.com)

**T1**

**\$909  
Million**

## Commuter Rail

Salt Lake City to Provo

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/27/2011



## PURPOSE & NEED

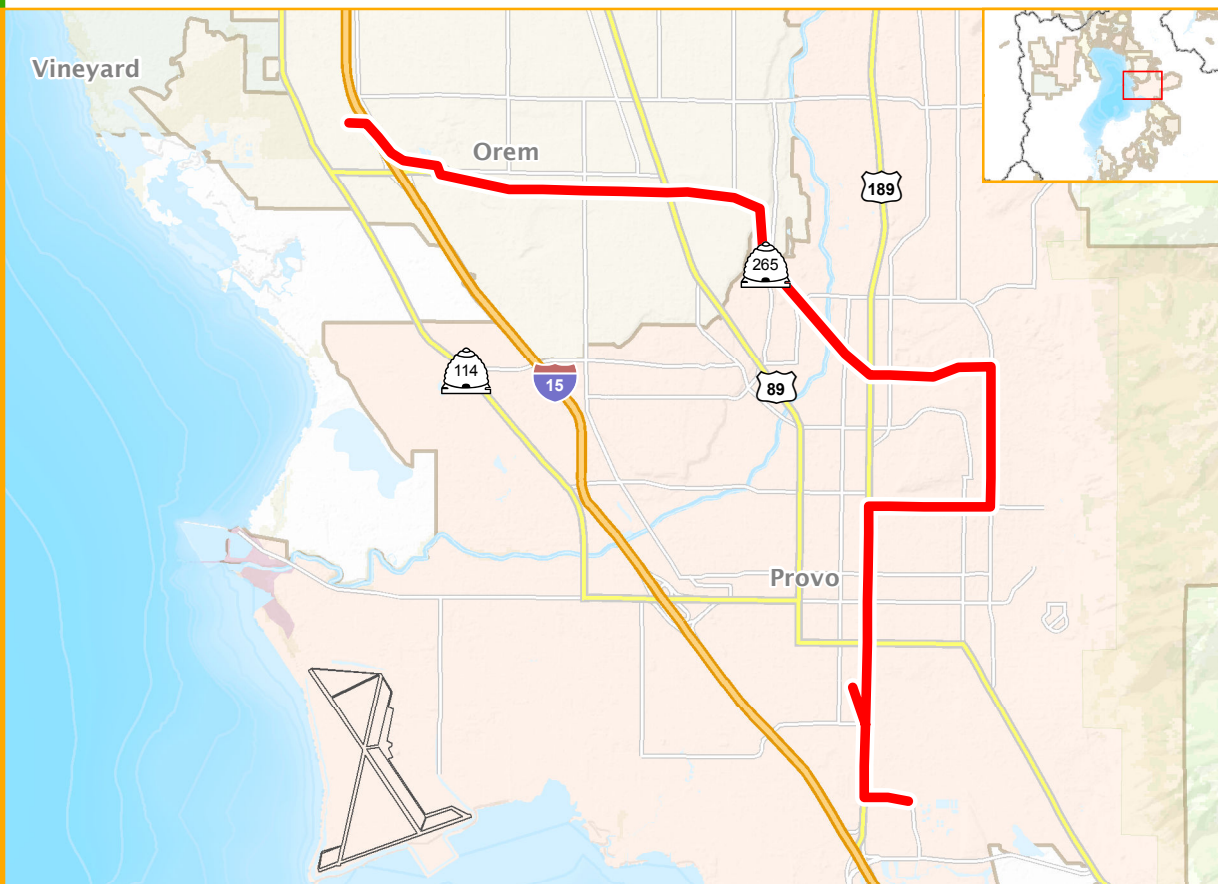
The purpose of the Provo-Orem Bus Rapid Transit Project is to increase transportation capacity to include higher-capacity, high quality, reliable transit service. Specifically, the purpose is to:

- Increase transportation capacity to accommodate growing population, employment, student enrollment, and travel demand in the year 2030.
- Improve transit competitiveness with the automobile by improving transit reliability and reducing transit travel time.
- Improve transit connections to and from FrontRunner commuter rail.
- Improve multi-modal connectivity across I-15 and from I-15 to Orem and Provo.

2030 Ridership: 16,900 / day



## PROJECT LOCATION MAP



## POTENTIAL IMPACTS

### Environmental Assessment (EA)

Definition: Process of estimating and evaluating significant short-term and long-term effects of a program or project on the quality of its location's environment. It also includes identifying ways to minimize, mitigate, or eliminate these effects and/or compensate for their impact.

Visit project website for more information:



<http://www.provo-oremrapidtransit.info/>

**T7**

\$150 - \$280  
Million

**Bus Rapid Transit**  
Provo to Orem

2040 METROPOLITAN  
TRANSPORTATION PLAN

Date: 7/27/2011

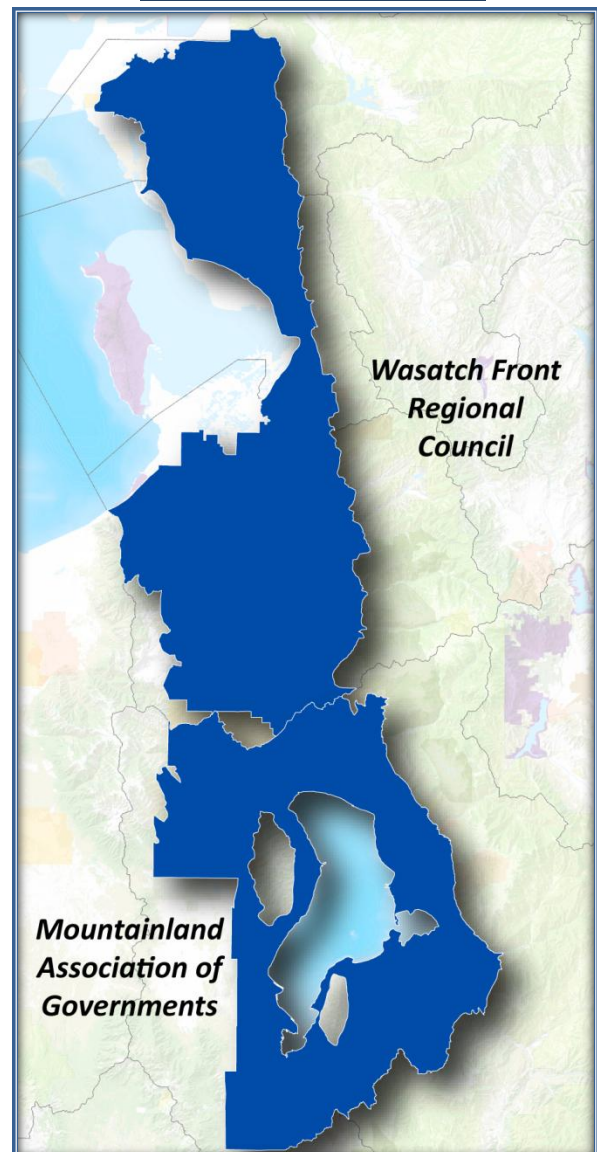


## PROCESS

Predicting where future transportation facilities will be needed is a large undertaking. Changes in land use patterns, political leadership, anticipated funding, or a gamut of factors can change the dynamics of an area and require further study. The development of the Metropolitan Transportation Plan occurs over a 4 year period with an update occurring every 4 years. This level of work as well as the frequency of updates allows Metropolitan Planning Organization (MPO) staff and decision makers to keep up on emerging trends and course changes. The process is collaborative. The MPO works with the county and municipal staffs' as well as the various transportation agencies staffs' to produce the plan. The following is an overview of the modeling process of how projects are developed and placed in the transportation plan.

- Origin-Destination flows
- Directional link vehicle volumes
- Vehicular travel times and speeds
- Transit ridership numbers.
- AM Travel Peak: 6-8:59 AM
- Midday: 9 AM – 2:59 PM
- PM Travel Peak: 3-5:59 PM
- Evening/Off-peak: 6 PM – 5:59 AM

## TRAVEL MODEL COVERAGE



## MODEL OVERVIEW

The MPO model is an integrated land-use, transportation, and air quality model co-developed with the Wasatch Front Regional Council and is designed to perform a wide range of analyses. The model includes several advanced features that place it on the cutting edge of improved modeling methods required to satisfy the requirements of the last federal transportation bill (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users or SAFETEA-LU) and the federal Clean Air Act. In addition, several features recommended by the Travel Model Improvement Program of the US Department of Transportation, the Federal Highway Administration, the Federal Transit Administration and the Environmental Protection Agency are incorporated into the model. Some of the most useful model outputs to aid in project selection include:

## MODEL COVERAGE

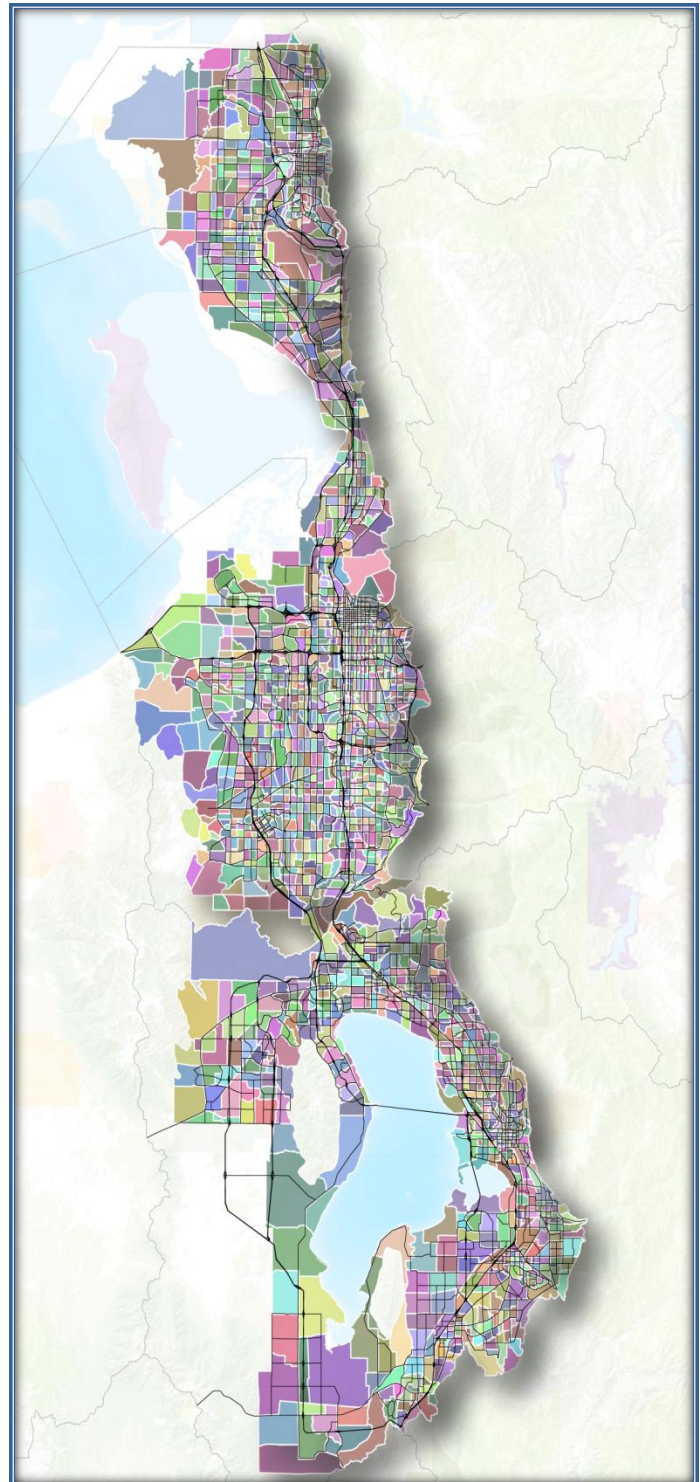
Until the year 2000, separate travel models were maintained for the three urbanized areas (Ogden, Salt Lake and Provo). In 2000, the three urban area models were combined into one model. The coverage has expanded over the years to the point that the majority of all of the developable area of Utah, Salt Lake, Davis, and Weber counties is covered by the model, with the exception of the canyons and the mountains to the east of the urbanized areas. In these cases the population in the areas that are outside of the travel model coverage is relatively small and is separated from the urban area by some distance. The eastern and southwestern portions of Utah County represent a significant percentage of the area, but its mountainous character and limited access make it unlikely that it will need to be incorporated into the modeled area in the near future.

## MODEL STRUCTURE

System-wide transportation planning models are typically based on a four-step modeling process: trip generation, trip distribution, mode split, and trip assignment. The travel model incorporates these steps and adds an auto ownership model that is sensitive to urban design variables. The model has a feedback loop between trip distribution and traffic assignment. This process ensures consistency between travel congestion and times that influence trip distribution patterns and are also an outcome of trip assignment. Travel time, or more generally speaking accessibility, is calculated based on outputs from the assignment model, but also is an important determinant of trip distribution and mode split. Therefore it is customary to iterate these three models in order to reach a convergent solution.

The travel model is a zonal-based forecasting tool, modeling travel between aggregate

### TAZ STRUCTURE WITH HIGHWAY



Transportation Analysis Zones (TAZ). The TAZ Structure with Highway Links map shows an example of the TAZ structure. TAZs cover the entire model region and don't overlap. There are 2,230 TAZs in the modeled region. Land-use and socioeconomic data are summarized within this spatial framework and travel is estimated between the TAZs. The TAZ Structure Map shows the Wasatch Front region TAZ and highway links structure.

Base highway and transit networks are created and input into the travel model. The highway network includes all facilities functionally designated as collector or above and some smaller facilities deemed needed to allow for better model flow. There are approximately 31,000 road links or connections in the network. The transit network is created with local, express, Bus Rapid Transit, Light Rail, and Commuter Rail lines coded in.

## TRAVEL MODEL COMPONENTS

At the start of a full model run, the auto ownership model estimates household auto ownership levels and then the trip generation model uses land use data and auto ownership to calculate trip ends at the Transportation Analysis Zone (TAZ) level. These trip ends are then paired into origins and destinations in the distribution model. In the mode split model, a mode of travel is selected for each trip. Vehicle trips are assigned to the highway network in the assignment model. The travel time feedback loop in the model is accomplished prior to mode choice by converting person trips to vehicle trips based on observed data.

The model is comprised of several steps with each step programmed or scripted separately. These steps include, but are not limited to the following:

**Land Use Allocation Model:** allocates future land use (i.e. housing and jobs) based on

accessibility, availability of land (through physical constraints and zoning), and location of existing land uses. This step saves a new land use file for the year being modeled. The land-use model is typically not run, but rather an adopted land-use forecast is input to the modeling system.

**Auto Ownership Model:** estimates the likelihood of each household in the region having 0, 1, 2, 3+ automobiles. Auto ownership is a function of the characteristics of a household and where it is located. Auto ownership and availability is a strong predictor of trip making and mode choice behavior.

**Trip Generation Model:** calculates the number of person trips generated within each TAZ. The trip generation model parameters are developed from travel surveys collected in 1993 and 2001. The number of trips to and from a place is a function of the amount and types of land-use activity within the zone.

**Trip Distribution Model:** pairs the origins and destinations for each zone for each of the trip purposes. Trip generation estimates the number of trips to or from each TAZ, trip distribution completes the trip by describing which trip origins are linked with which trip destinations. The result of this is a person trip matrix for each trip type. Trip distribution links trip-ends of the same type based primarily on the spatial separation of different land-uses and observed sensitivities to trip length. One output of trip distribution is the person trip table for home to work that can be compared to the "Journey-to-Work" data provided by the Bureau of the Census.

**Highway/Transit Skim Builder:** finds the best available travel path via each of the travel modes explicitly modeled. Several modes are explicitly modeled, including auto, transit modes (local bus, bus rapid



transit, light rail, commuter rail) and non-motorized modes. Skims are reasonable approximations of the travel time and cost between all pairs of TAZs, and skims are described for each travel mode. The path-finding algorithms are calibrated based on observed travel paths and observed relationships between volumes and congested speeds.

**Mode Split Model:** calculates which mode each person trip is likely to take based on availability and mode-specific parameters (e.g. time, cost, transit frequency). Mode split provides a breakdown of person trips by mode both for captive riders (people without automobiles) and for the total population. The mode split model is developed based on observed data on mode preferences and what those preferences imply about sensitivities to mode attributes.

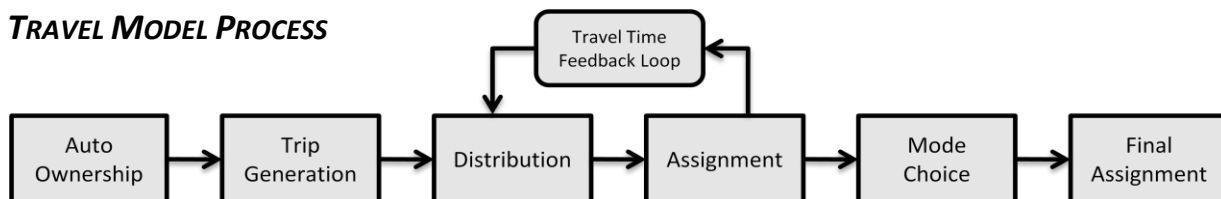
**Vehicle Assignment Model:** locates the “best” routes between each origin/destination pair and assigns vehicle trips to the highway network. Important outputs of this module include number of vehicles on each roadway segment by time period and turning movements at

intersections. Several other pieces of data can be extracted, including operating speeds, travel times, Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and Volume over Capacity (V/C) on links and at intersections. In addition, one can configure the vehicle assignment to save all the vehicle trips that use a single link in either direction (select link analysis) or all the vehicle trips that originate or are destined for a zone (select zone analysis).

**Transit Assignment:** uses the transit trip table output from mode split and assigns person trips using transit to the appropriate transit route. This provides a means of viewing transit ridership graphically and understanding the relative effectiveness of different segments of the transit network.

**Model Output:** is summarized automatically by the model, including regional statistics (e.g. VMT, VHT, transit shares and trip lengths), corridor and segment performance statistics (e.g. delay, volume, and ridership), district and county-level trip flows, MOBILE6 emissions model inputs (EPA air quality model), and calibration statistics.

### TRAVEL MODEL PROCESS



### MODEL CALIBRATION

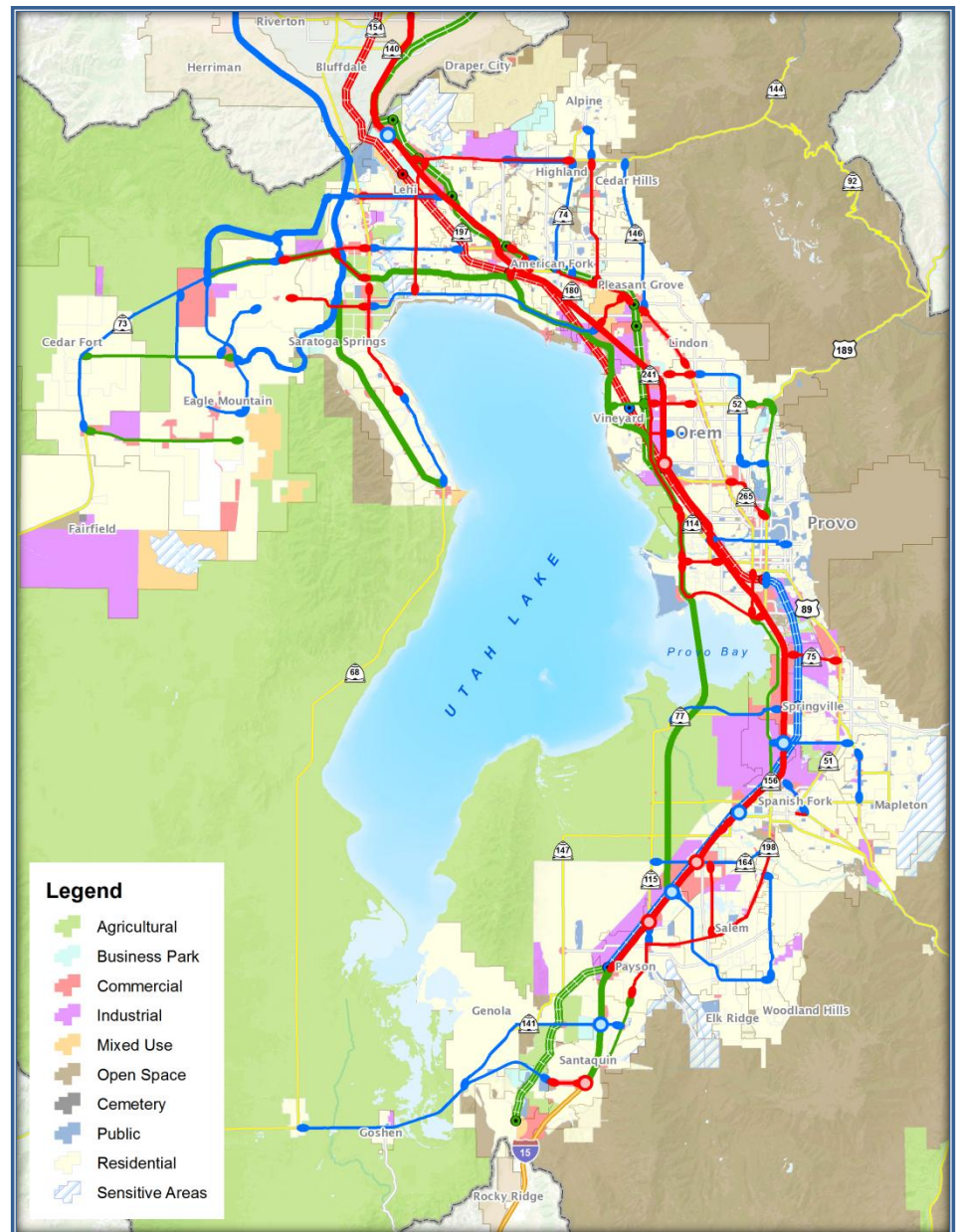
The model is calibrated to reasonably represent 2007 “base year” travel conditions and patterns, a process in which model output is checked or “validated” against real-world data. Trip rates, transit ridership and highway volumes are examples of type of model outputs that are validated. When the model results do not match the base-year values within an

acceptable tolerance, parameters are adjusted until the model is acceptable. For future forecast years, the model output is reviewed for “reasonableness” to validate model results allowing model sensitivities to be assessed. UDOT traffic count data is used to further calibrate individual corridors.

## LAND USE MODELING

Each municipality and the county develop their land use plans as a part of the general plan process. In developing future land use development patterns for the traffic model, MPO staff use each municipal and the county land use plan as a first step in creating a future countywide development pattern to use in the traffic model. Many land use plans only plan for the next 10 years leaving a gap between their planning horizon and the needs of the 2040 transportation plan. MPO state met with each municipality and the county to review their plans and to gain additional insight of where future growth could occur. Also, any major proposed developments are also designed in the future countywide generalized land use plan. Goals of the Wasatch Choices 2040 plan are also incorporated into future development patterns. The finalized land use plan for the transportation plan is used to develop the socio-economic data needed to run the travel model. This data includes population, households, and employment.

### GENERAL LAND USE

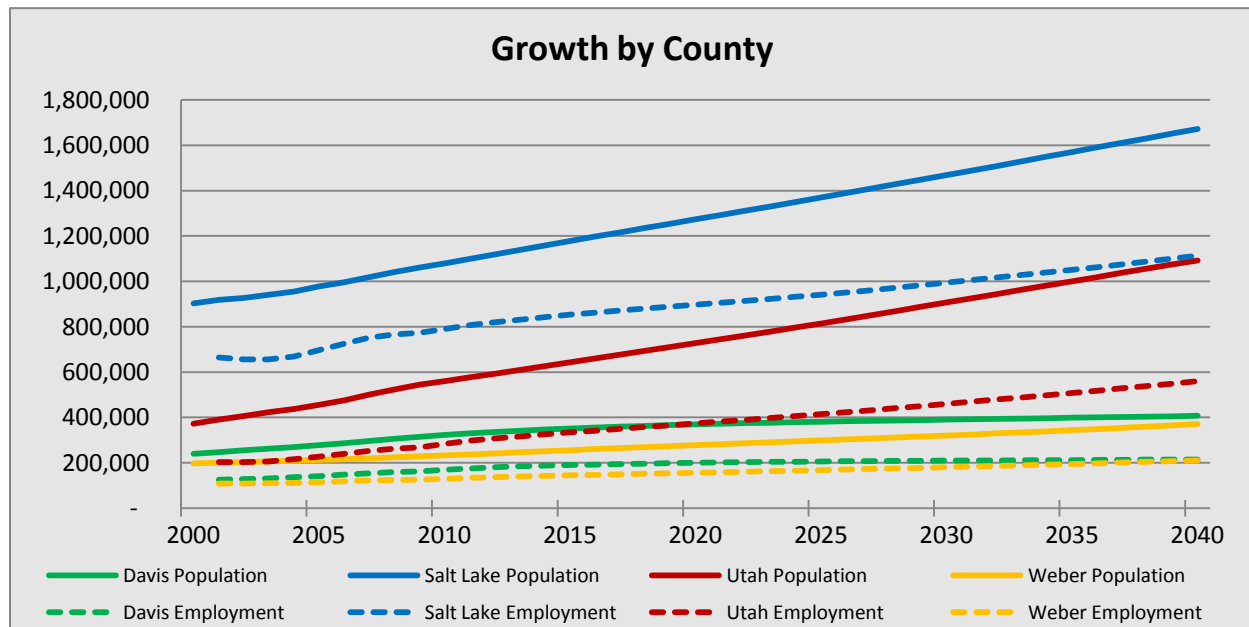


## SOCIO-ECONOMIC GROWTH TRENDS

The Governor's Office of Planning and Budget forecasts Utah County's total population to increase 100%, from 545,307 in 2009 (Census estimate) to 1,092,450 in 2040, or a 2.7% annual average rate of change. Total employment follows a similar trend growing 97%, from 283,915 in 2009 to 560,058 in 2040, or a 2.2% annual average rate of change. The growth in Utah County is forecasted to be more

robust than the other counties along the Wasatch Front. When compared to the region's total population for Weber, Davis, Salt Lake, and Utah counties, Utah County's region-wide share increases from 25% in 2009 to 31% in 2030 and the regional percentage of total employment increases from 20% in 2009 to 27% in 2030.

### GROWTH BY WASATCH FRONT COUNTY



## SOCIO-ECONOMIC DISTRIBUTION

The distribution of household population density in 2007 is centered in the Orem/Provo area. The highest growth area over the last decade has been in the northwest county area straddling the I-15 Freeway, and in the northwest area of new development in Eagle Mountain and Saratoga Springs. This is mainly attributed to the Salt Lake City and Provo/Orem Metro areas converging together. Growth has also accrued in the southern area of Utah County, but densities still remain at rural values with the historic cores mainly expanding. The

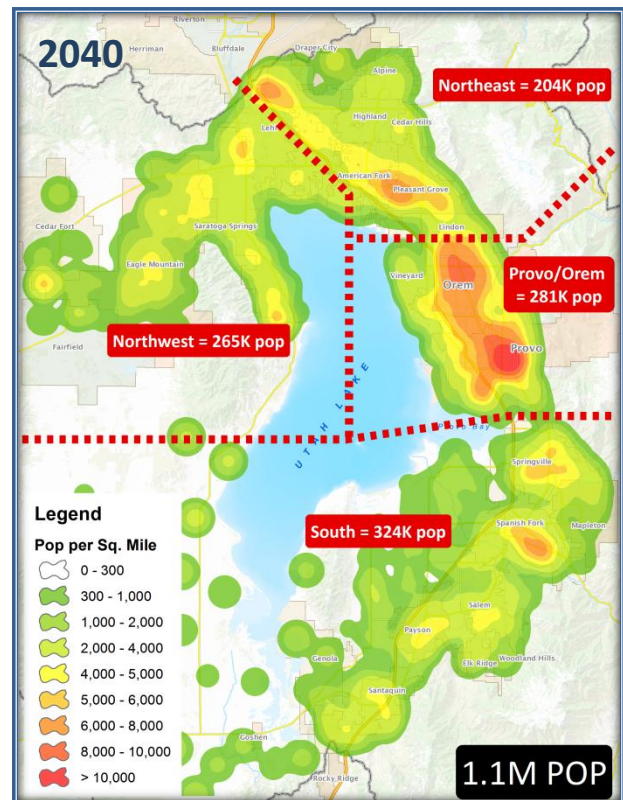
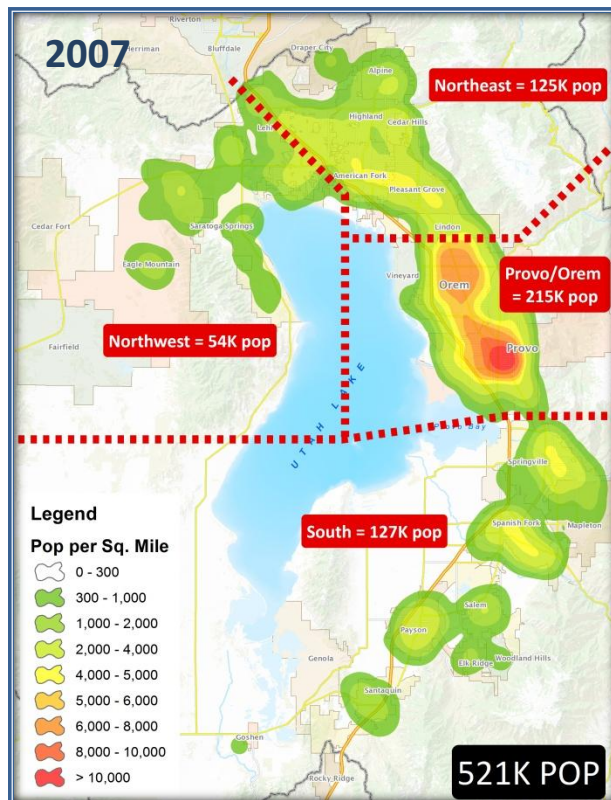
far western and south west portions of the county have experienced no growth and have little or no population. By 2040, residential densities will continue to increase outside the Orem/Provo core resulting in more urban densities between northeastern and central portions of the county. The Orem/Provo area retains its core status as the population and employment center, but northward along the I-15 freeway and into Salt Lake County, similar densities occur. The northwestern county area is more suburban, but is emerging into self



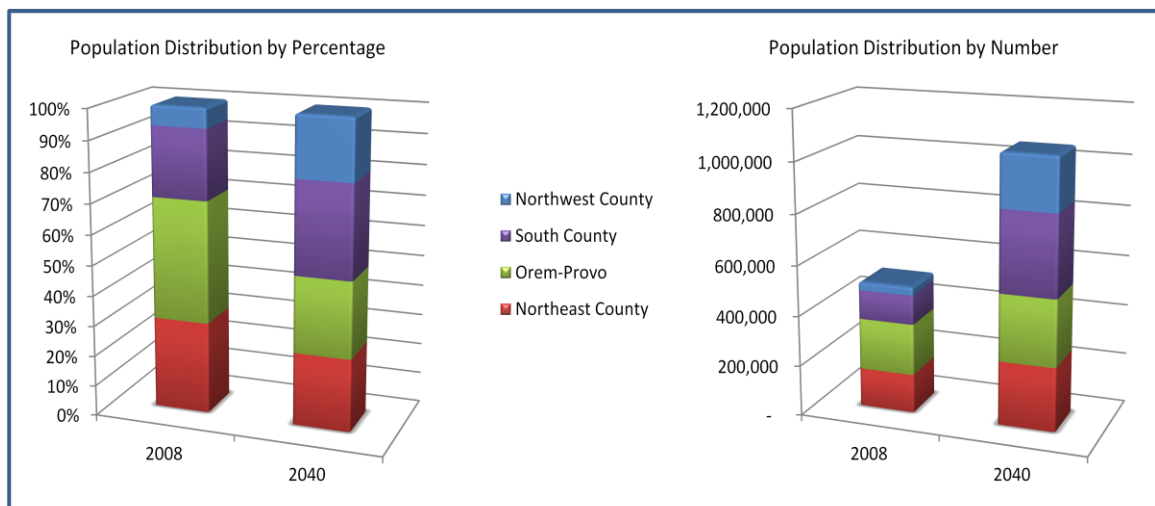
sustaining community with some urban characteristics. The southern area continues to have growth ringing out from the historic cores and becomes less rural, but densities remain

low. Some growth is projected to occur in the southwest area of the county, but the far western area has little growth.

## POPULATION DENSITY BY AREA



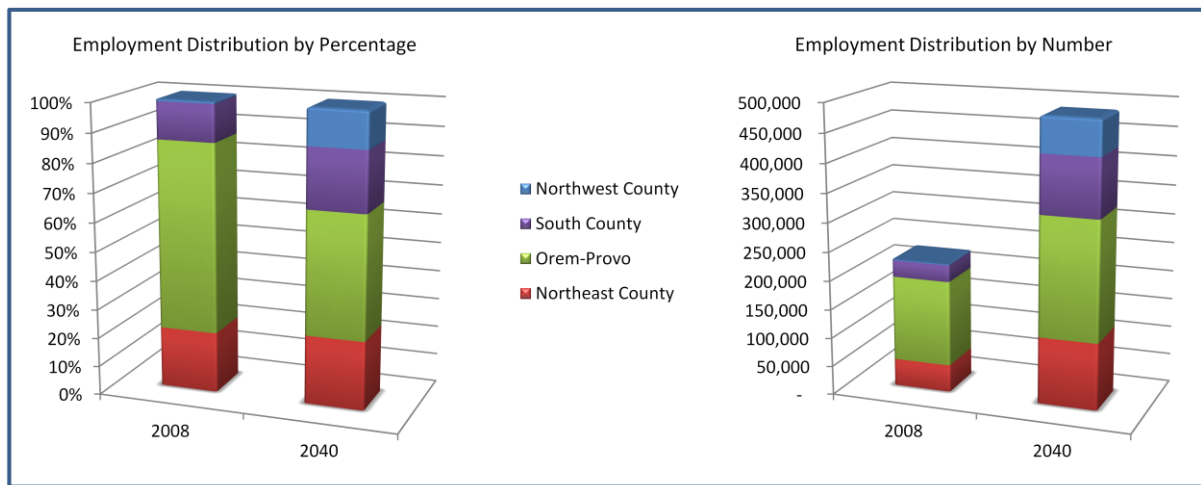
## POPULATION DISTRIBUTION BY AREA



The distribution of total employment in Utah County in 2007 has Provo/Orem as the main employment center for the county. The northeastern area of the county, especially along the I-15 freeway and State Street have moderate densities of employment, while the southern area has rural employment characteristics with the historic cores having the

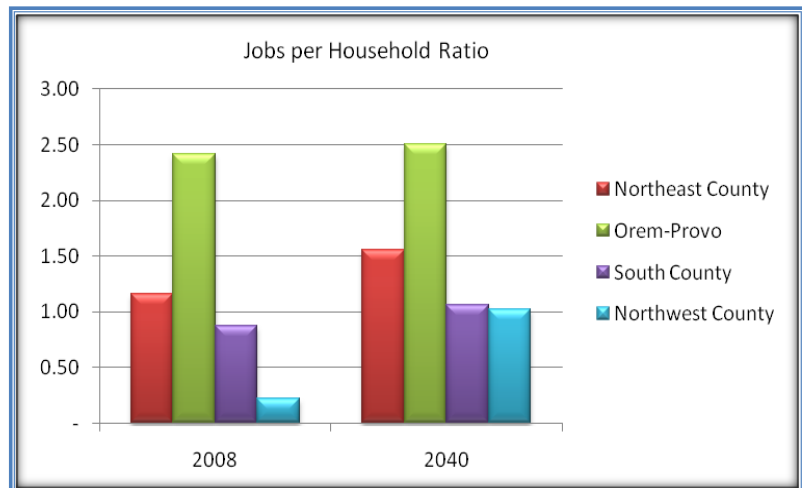
majority of the non-agriculture jobs. The western and southwestern areas have very low to no employment. Provo/Orem continues as the employment center through 2040, though its predominance is less as more jobs locate along the I-15 freeway to the north and other parts of the county become more suburban and urban.

### EMPLOYMENT DISTRIBUTION BY AREA



### TRIP GENERATION

One of the key components of trip generation in the travel demand model is the relative placement of the population or households and the employment. Typically, there should be a balance of the jobs to households reflective of the type and intensity of land uses planned for an area. To measure this, a ratio of the jobs (total employment) to households is used. Rural areas tend to have a very low jobs/households ratio and more urbanized areas a higher ratio.



In 2007, the Provo/Orem area attracts the most work and non-work trips from all other areas of the county to the other areas in the county, reflective of a core urbanized area, with more

than 2.4 jobs for every household. An interesting development has occurred over the last decade throughout the remainder of the county, the jobs to household ratio has

dropped in all areas, with the northwestern area dropping significantly, due to the high residential growth that has occurred, commercial development has lagged behind this residential growth (not shown on chart). The northern and southern areas have about 1 job per household with the northwest county at about .21. Though there are jobs in these areas, there are not enough to support localized work trips. These areas produce the majority of work trips to other places in the region.

By 2040 as most of the developed areas of Utah County become more suburban and urban with jobs to household ratios on the increase. The most dramatic change occurs in the northwestern part of the county as this area transitions into a more suburban area like the present day northeastern area. The northeast area becomes more balanced, but still is not equal to the Provo/Orem area. The south area also becomes more suburban.

the Provo / Orem area will continue to be the hub of employment activity. The linear configuration of urban development, leads to heavy usage of I-15. Even with the current I-15 CORE construction with additional lane capacity, I-15 by 2030 will experience congestion.

The number of workers commuting from Utah County to Salt Lake County has always been larger than the reverse commute. This trend is slowly changing. In the Census 1990, 10.6% of all Utah County workers were employed outside of Utah County. According to Census 2000 that percentage was raised to 14.6%. The amount of work trips from Salt Lake County south to Utah County have increased by 147% since in the 1990

Census, whereas work trips from Utah County going north to Salt Lake County grew by 126%. Though increasing numbers of commuters are traveling south to Utah County, the total trips into Salt Lake County still outnumber those commuting to Utah County two to one.

## COMMUTER CHARACTERISTICS

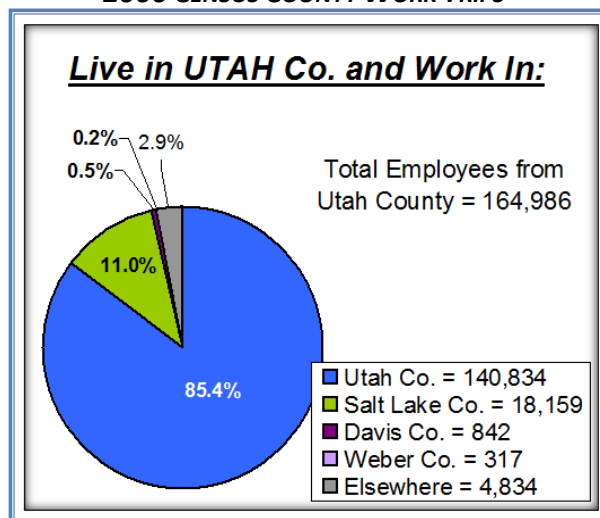
Future transportation problems will occur as a result of high travel demands throughout the area. Most of the current jobs and a majority of the expected future employment growth will occur in the Provo / Orem area.

Although it is expected that some future employment opportunities will be disbursed throughout the County,

The majority of these inter-county commutes exceed 40 miles in each direction. They contribute to a large portion of the regions annual vehicle travel and thus air quality problems. Further, these long trips are costly to

travelers and contribute to congestion. As the north end of Utah County and the south end of Salt Lake County continue to develop, these longer trips will slowly diminish. All in all, in 2000, only 14.6% of all Utah County employees work outside the county. Our highest demand on commuter facilities is for residents that live and work in Utah County.

2000 CENSUS COUNTY WORK TRIPS





## MODE SPLIT

The 2000 Census summarized the work trip mode split as listed on the Mode Split Census 2000 table. Work trips by automobile by either drive alone or car pool account for the vast majority of all work trips at 87%. Walking is almost 5% due to the high amount of college students that attend the valley's two universities. The Inter-Regional Corridor Alternative Analysis study looked at only three of the different modes of travel for 2030; Drive

alone, Carpool, and Transit as shown on the Mode Split IRCAA 2030 table. The projected travel changes come about as a result of improvements listed in the transportation plan, that keep congestion levels low, the high growth rate, further urbanization and densification of the area, the convergence of Utah and Salt Lake Counties, and other socio-economic trends of the region.

### MODE SPLIT CENSUS 2000 DATA

| MODE                         | 2000 Percent |
|------------------------------|--------------|
| Drive Alone                  | 72.5%        |
| Car Pool                     | 14.9%        |
| Transit                      | 1.4%         |
| Walk                         | 4.9%         |
| Work at Home (Telecommuting) | 5%           |
| Other                        | 1.3%         |

### MODE SPLIT IRCAA 2030 DATA

| Mode                       | 2030 Percent |
|----------------------------|--------------|
| Drive Alone                | 62%          |
| Car Pool in I-15 HOV Lanes | 26%          |
| Transit                    | 12%          |

## LEVEL-OF-SERVICE

Over the years the Transportation Research Board of the National Academy of Science has devised a qualitative method of describing the ease, comfort, and convenience that a driver of a vehicle experiences along a street or highway. This method of description is called Level-of-Service (LOS). The LOS set as a goal for the transportation plan is a balance between convenience and cost. Our elected officials have adopted a policy for planning of a Level-of-Service D, following the UDOT Guidelines for the 30-year horizon,

in view of the funding available. The national standard is to plan for a LOS C.

### LEVEL-OF-SERVICE

|   |                                                                                     |                                                                                                                                                          |
|---|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| A |  | <b>FREE FLOW:</b> Low volumes and no delays                                                                                                              |
| B |  | <b>STABLE FLOW:</b> Speeds restricted by travel conditions, minor delays                                                                                 |
| C |  | <b>STABLE FLOW:</b> Speeds and maneuverability closely controlled due to higher volumes                                                                  |
| D |  | <b>STABLE FLOW:</b> Speeds considerably affected by change in operation conditions. High density traffic restricts maneuverability, volume near capacity |
| E |  | <b>UNSTABLE FLOW:</b> Low speeds, considerable delay, volume at over slightly over capacity                                                              |
| F |  | <b>FORCED FLOW:</b> Very low speeds, volumes exceed capacity, long delays with stop-and-go traffic                                                       |

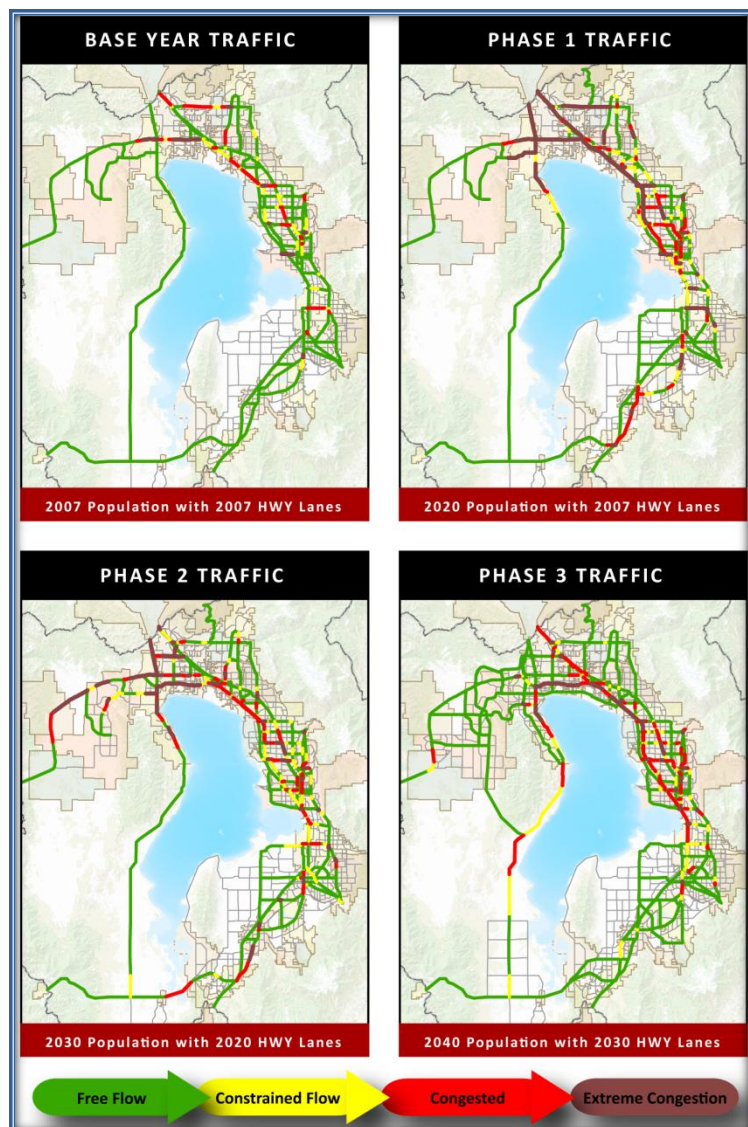
## HIGHWAY AND TRANSIT MODEL NETWORK

In developing a plan for a balanced transportation system, attention was given to connecting regional freeway and arterial facilities, both internal to the county and across the county line. Minor arterials and collectors were also evaluated in the system for connectivity to other facilities as well as to major commercial, retail, and employment centers. Local bus routes, bus rapid transit lines, and light

and commuter rail lines were integrated with the transportation system at intermodal hubs, mainly around rail stations. Park and ride facilities were designed to match the transit modes accessing them. Where transit and highway projects crossed the county line, coordination was made with Mountainland's sister agencies ensuring they were consistent with other regional transportation plans.

## TRAVEL DEMAND MODEL OUTPUTS - HIGHWAYS

To identify needed highway projects for the plan, regional roads that are classified or proposed as minor or principal arterials, expressways, or freeways are analyzed. In developing these projects, three sources are reviewed. They include projects on the current transportation plan, city master transportation plans, and transportation studies. Projects from these sources are reviewed by MPO staff to create a draft highway network to be modeled. In running the model, the first 10 year phase of the plan, or Phase 1, is run using the socio-economic data for 2020 (population, employment, households) compared to 2007, or The Base Year model network. This shows what traffic congestion will be in 2020 if no improvements are made to the highway network. It also allows staff to visualize where needed highway projects should be planned. Projects are proposed and the model is then run again for Phase One-2020, with the new projects added to gauge their performance. This process is then repeated for each phase of the plan to 2040.



Once the three phases of the plan are modeled and a draft listing of projects is created, MPO staff review the data and projects with each municipality, the county, and the Utah Department of Transportation gaining input on any needed changes. Numerous meeting were held to "fine tune" the project list. One major theme in the plan for this update was the need for additional large highway facilities by 2040.

An exercise was done illustrating the current day highway system in Salt Lake County and comparing it to the Institute of Transportation Engineers (ITE) Ideal Highway Spacing guidelines allowing decision makers to view current conditions in the Salt Lake Valley, something most can relate to because of knowledge of the area. The conclusion was that other than the southwest area of Salt Lake County, the highway network was close to optional.

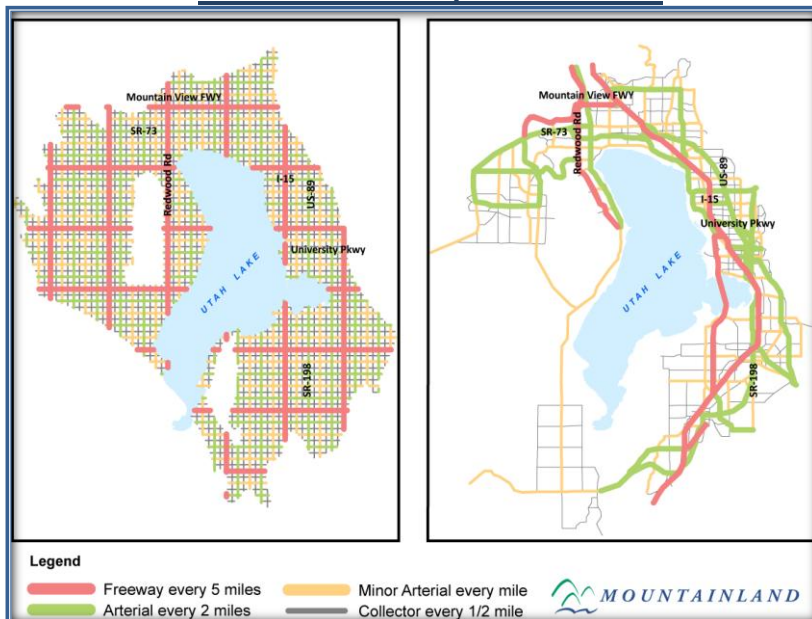
## TRAVEL DEMAND MODEL OUTPUTS - FREEWAYS AND EXPRESSWAYS

By 2040, it becomes quite apparent that new arterial roads cannot be the only solution to our growth. The I-15 freeway at 12 lanes is heavily congested in the PM peak period and has reached is capacity. Many major arterials in the north county are experiencing high congestion levels. Two prominent bottleneck areas in the county, Lindon and Springville, cannot function without reliever corridors. An expansion of major highway facilities in the county is needed.

### ITE IDEAL SPACING / SALT LAKE COUNTY



### ITE IDEAL SPACING / UTAH COUNTY



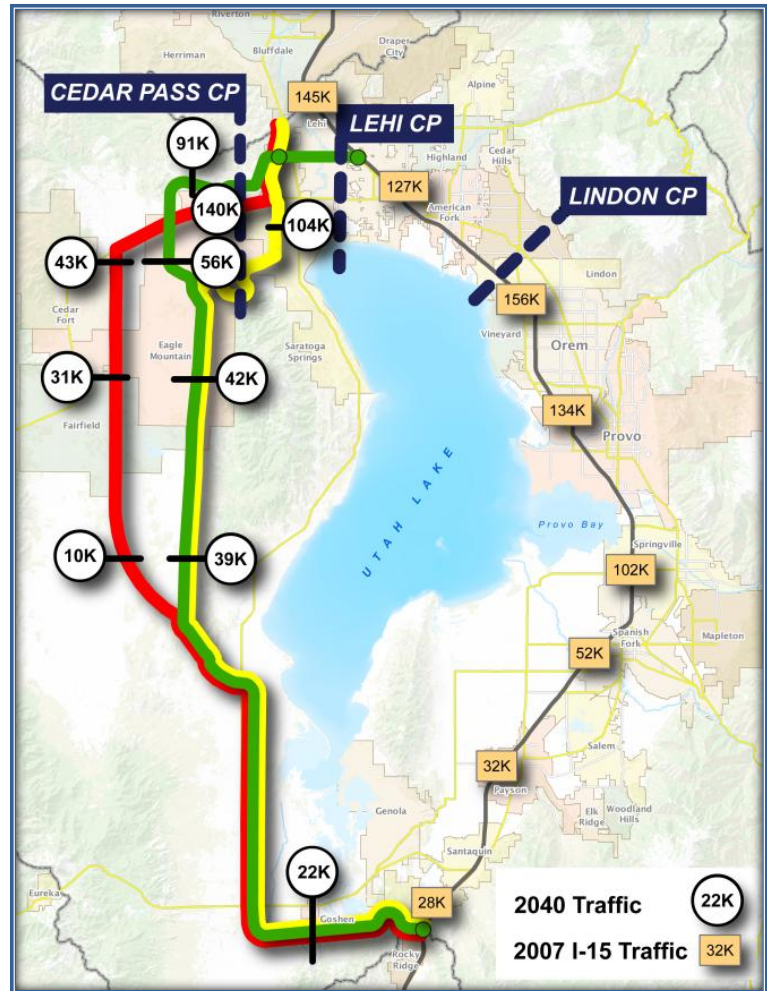
The same ITE grid was then overlaid in Utah County with the planned 2040 highway system (I-15 Freeway and Mountain View Freeway in Lehi as the only large facilities) showing the lack of geographic coverage of larger highway facilities. A simple analogy was then drawn, Utah County is proposed to raise to 1.1 million in population in 2040, the same population as current day Salt Lake County. Our planned major highway facilities with this



level of urbanization cannot handle the traffic. A grid system of major facilities is needed. Not a small task because of the geographic realities of the county (Utah Lake, Lake Mountain, Point of the Mountain.) Other metropolitan areas near 1 million today include Buffalo, NY, Richmond, VA, Raleigh, NC, and Oklahoma City, OK. Their major highway systems were also reviewed to further demonstrate the need to expand freeway and expressway facilities in the region.

With the need of expansion of major highway facilities demonstrated, MPO staff began to model various freeway scenarios to address two goals; congestion relief in the bottleneck areas of Lehi, Lindon, Cedar Pass, and Springville, and corridor preservation in the Cedar and Goshen Valleys for a west side corridor. West side corridors through Cedar Pass connecting the Mountain View Freeway in Saratoga Springs to Santaquin were first modeled. Three scenarios were done with the main difference being the placement of a freeway through Cedar Pass and Eagle Mountain. A northern route along Camp Williams, preferred by Eagle Mountain, a southern route over the Lake Mountains into the Hidden Valley area, preferred by Saratoga Springs and a third options along SR-73. The SR-73 Freeway option modeled the best due to its centralized location with the north and the south freeways functioning about the same. Another option in Eagle Mountain was a western vs. an eastern freeway. Most growth to 2040 in Eagle Mountain is projects to be in the north and east area of the city. This development pattern favored an eastern freeway alignment to be built first. Modeling shows that a freeway continuing south

### WEST SIDE FREEWAY VISION CORRIDORS



to Santaquin by 2040 is not needed, but a corridor should be preserved for the future.

Modeling a west side corridor through Cedar Pass, the Cedar Valley to Santaquin corridor alone did not address the goal of congestion relief in Lehi, Lindon, or Springville. MPO staff with the direction of the MPO Technical Advisory Committee next modeled additional freeway scenarios that would better create the grid network proposed by the ITE highway spacing guidelines. The continuation of the Mountain View Freeway south through Saratoga Springs and crossing Utah Lake to I-15 in Provo was modeled as well as a freeway from

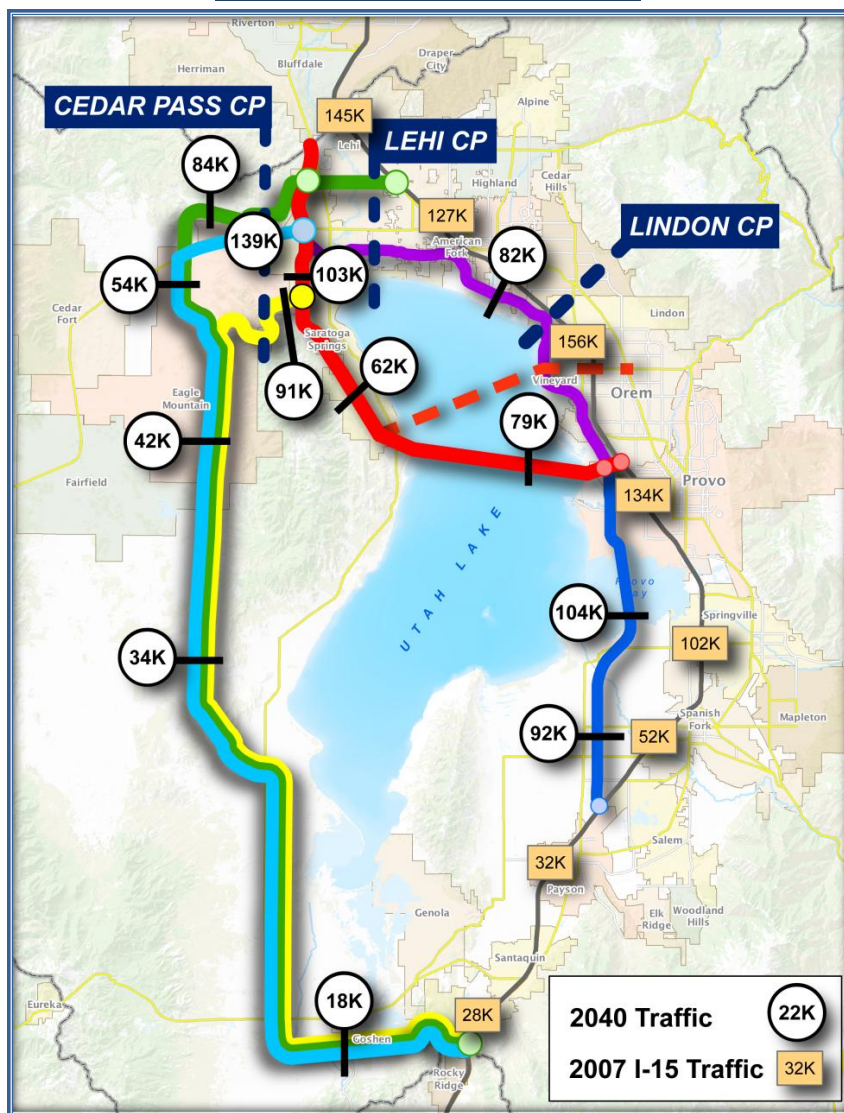
Payson to Provo as suggested in the Provo to Nebo Transportation Study and a freeway from Provo to Lehi via Vineyard Connector and Pioneer Crossing. All these corridors would have major obstacles to work through from environmental issues to home and business impacts. The overall impact to the transportation network was quite noticeable with these corridors. Congestion relief in all of

the bottleneck areas is achieved with all the modeled freeways carrying freeway levels of traffic by 2040.

A Utah Lake crossing bridge has been proposed by a private developer that is currently being reviewed by the state of Utah. The proposal is to start near Pelican Point in Saratoga Springs and cross the lake meeting at Orem 800 North. The MPO modeled this proposal as well as a

connection to Provo 2000 North (FWY to FWY interchange at I-15 with no eastbound connection into Provo/Orem). The Orem 800 North connection modeled 10,000 less trips per day over the Provo 2000 North connection. The reason for modeling an alternate location was due to concerns that connecting a major facility at Orem 800 North places more traffic in the highest traffic volume area in the county. Of course with the environmental impacts that could occur to the wetlands and other historical elementals surrounding the lake, any proposal would need further environmental work. Booth corridor alignments are shown in the final plan as vision projects, addressing the need for further study.

## COUNTYWIDE VISION CORRIDORS

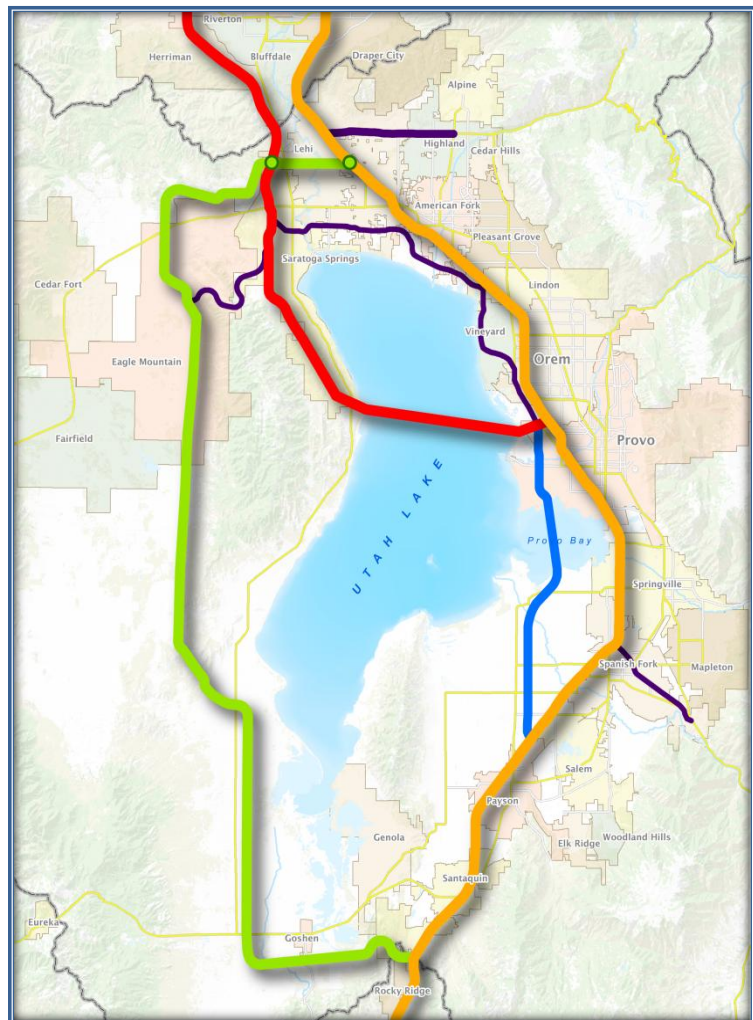




In balancing the community impacts and the traffic needs, MPO staff made the recommendation to the MPO Technical Advisory Committee to place in the plan the following:

- Lake Mountain Freeway - Mountain View Freeway Saratoga Springs via the north Cedar Pass alignment and east Eagle Mountain alignment south to Santaquin (Green)
- Mountain View Freeway/Utah Lake Crossing - Continue Mountain View FWY south through Saratoga Springs and across Utah Lake via a bridge connecting I-15 at about Provo 2000 North (Red)
- Lehi 2100 North - Freeway connects I-15 to Mountain View Freeway (Green)
- South Wasatch Freeway - I-15 Payson to the Mountain View Freeway in Provo (Blue)
- Vineyard Connector/Pioneer Crossing Expressway - Extends South Wasatch Freeway northward via proposed Vineyard Connector and become Pioneer Crossing (Purple)
- Hidden Valley Expressway - Proposed southern corridor through the Cedar Pass area between Saratoga Springs (Purple)
- Timpanogos Highway/SR- 92 - Convert to an expressway (Purple)
- US-6 Spanish Fork - Convert to an expressway (Purple)

## PREFERRED FREEWAYS/EXPRESSWAYS



The MPO Technical Advisory Committee recommended to the Regional Planning Committee (MPO board) the MPO staff proposal. Due to concerns that came between these two committee meetings, additional changes to the Cedar Pass Area and through Lehi occurred. The corridor through Cedar Pass needs more study and both the cities of Eagle

Mountain and Saratoga Springs are not ready to approve which location will be a freeway and with an expressway at the time of the finalizing of this plan. It was agreed that each corridor would be showing in the plan as preferred by each city. The north corridor or Lake Mountain corridor will be shown as a freeway in Eagle Mountain and an expressway in Saratoga



Springs. The south corridor or Hidden Valley corridor will be shown as a freeway in Saratoga Springs and an expressway in Eagle Mountain. Through Lehi, concerns were raised by the city of Lehi that they desire the Lehi 2100 North FWY that connects the Mountain View Freeway to I-15, be shown as a 10 lane expressway with no freeway to freeway interchange at I-15. They prefer the freeway connection between

I-15 and the Mountain View Freeway moved to the Point of the Mountain. Their request is listed in the final plan this way with the Point of the Mountain connection as a vision project, because of comments by the Utah Department of Transportation and US Department of Transportation concerning past studies of a connection at this location being viable.

## TRANSIT PROJECT SELECTION

Transit projects are selected by assessing what areas or markets are viable for investments in transit coupled with an analysis of what transit technology is most appropriate in the environment that it is expected to perform. The measure of appropriateness is found in the study process and incorporates public input. Population and employment densities are the most important factors in determining transit need. Higher development densities allow more housing and commercial activities to take place and concentrate more trips into a smaller area. A concentration of trips traveling to or from the same point makes transit operations viable. If in the study process, it is determined that sufficient transit market potential exists in a certain area or corridor, then a matrix of transit options are explored. Those options, if regionally significant, are modeled using the regional travel demand model to predict its effectiveness.

Plans or selections are determined with the following goals:

- **Ridership:** Increase ridership at a rate greater than population growth.
- **Quality:** Provide transit service that is fast, frequent, and reliable by incorporating modern technologies, infrastructure improvements, and passenger amenities to enhance transit system operations and rider comfort.

- **Productivity:** Increase transit ridership per unit of service by evaluating and modifying service areas with greater potential and minimize service with lesser potential for ridership.
- **Efficiency:** Reduce the cost per passenger by maximizing ridership and minimizing operating costs.
- **Access:** Maximize access to the transit system according to the intensity of development through appropriate local, express, and regional services complimented by park and ride lots, transit centers, and intermodal facilities.

### EXPANDING TRANSIT MARKET

Utah County population and employment while concentrated in Orem and Provo is experiencing significant growth particularly in the north part of the county. It is expected that as population and employment grow, more areas of the county will have densities to support internal, circulating transit routes. Potential increases in local transit could come in the form of new east/west routes that would connect to commuter rail and light rail stations and bus rapid transit alignments, tighter grid patterns with more frequency in Provo and Orem, additional north county routes, a more frequent south county route, more frequent service along State Street and on local circulating

routes, and more frequent service on the Utah Valley/TRAX Express bus.

### **BUS RAPID TRANSIT**

Bus Rapid Transit (BRT) is a new concept gaining national attention. The concept behind BRT is to provide bus service in the image of light rail at less cost. BRT operates much like light rail with buses in designated bus lanes to avoid congestion and having traffic signal preemption to speed running times.

travel demand in the study area; insufficient transit capacity to serve growing demand; poor transit reliability due to congested roadways; and lack of connectivity across I-15 and from I-15 to Orem and Provo. The travel demand needs of residents and commuters in the study area are expected to be greater than the capacity of the existing transportation system in 2040. The needs result from the following problems:

- Increasing travel demand and insufficient roadway capacity
- Insufficient transit capacity
- Poor transit reliability and travel time
- Lack of high-quality alternatives to auto travel
- Lack of connectivity across I-15 and from I-15 to Orem and Provo

The Provo-Orem Bus Rapid Transit project has been the subject of an Environmental Assessment in preparation for receiving a clearance or Record of Decision to move this project toward construction. It is expected that soon the federal agencies providing oversight on this process will soon issue this clearance for the project.

#### ➤ **Lehi to Lindon Bus Rapid Transit Line**

The Lehi to Lindon Bus Rapid Transit Line serves the very northern part of the county. It connects riders to commuter rail at the Thanksgiving Point station and runs along HWY-92 to Highland, at North County Blvd (4800 West) it turns south connecting to the Timpanogos Temple, American Fork Hospital and into Lindon.

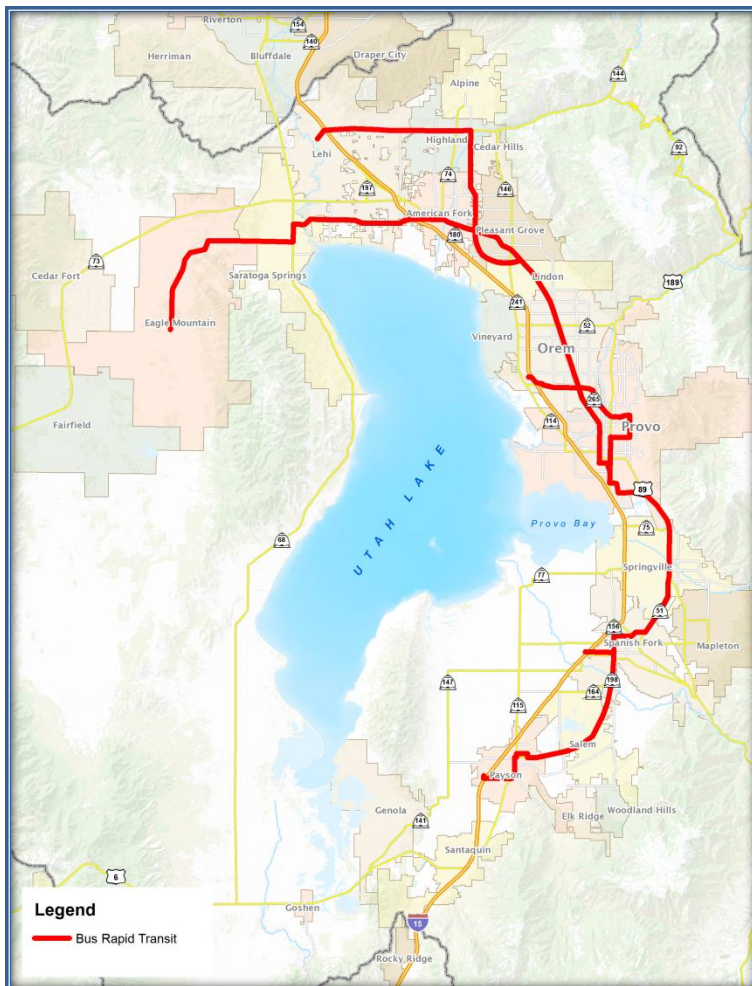
#### ➤ **Provo-Orem Bus Rapid Transit Line**

The Provo-Orem Bus Rapid Transit Project is needed because of growing population, employment, student enrollment, and

#### ➤ **American Fork to Eagle Mountain Bus Rapid Transit Line**

The American Fork to Eagle Mountain Bus Rapid Transit Line is contemplated to

### **BUS RAPID TRANSIT**



provide efficient access from Eagle Mountain, Saratoga Springs and western Lehi residents to Commuter Rail. It would connect from the Eagle Mountain town center through Saratoga Springs and proceed along Pioneer Crossing to the commuter rail station at American Fork.

➤ **American Fork to Provo Bus Rapid Transit Line**

The American Fork to Provo Bus Rapid Transit Line uses the State Street corridor connecting the American Fork Commuter Rail Station to the Provo – Orem BRT, proceeding along Provo 500 West ending at the Provo Intermodal Center.

➤ **Provo to Spanish Fork Bus Rapid Transit Line**

The south county will be served by the Provo to Spanish Fork Bus Rapid Transit Line. The line would initiate either at the Provo Intermodal Center or the south end of the Provo-Orem BRT Line and connect south using the State ST corridor to run through Springville and Spanish Fork eventually terminating at the Spanish Fork proposed future commuter rail station.

➤ **Spanish Fork to Payson Bus Rapid Transit Line**

The Spanish Fork to Payson Bus Rapid Transit Line will have to possible routings. This line will connect at the commuter rail station in Spanish Fork and traverse through Salem and into Payson ending at the Payson Commuter Rail Station. It will act as a collector and distributor of commuter rail riders.

commute express routes, and additional articulated buses. Serving an increased number of transit trips between Salt Lake and Utah County would help reduce vehicle miles traveled and lower pollution emissions. The benefits of intercity bus service apply to residents and employers in both Utah and Salt Lake Counties. Residents of both counties ride the bus to and from school and job opportunities, and the entire region benefits from reduced congestion. Additional park and ride facilities and commuter and light rail stations along with the addition of carpool lanes on I-15 will have a significant impact on travel times and would make the service more appealing to new riders.

A new planned bus network has been developed in partnership with UTA, and is being modeled as part of this plan. The new network uses transit stations in various parts of the county with a bus network feeding each route from localized areas providing a high frequency core route to travel along the I-15 corridor. The bus system in conjunction with commuter rail, BRT and light rail will to move people quickly between each of the transit stations and destinations. The purpose of the new network is to facilitate quicker movements from the south and north parts of the county and eliminate the long tedious routes that currently travel the length of the count. For instance someone living in the south county could ride a localized bus to the Payson commuter rail station; from there that person would catch either commuter rail or a BRT and quickly be brought to a central or northern county transit station to possibly transfer to another local route going to their destination.

**EXPANDED BUS SERVICE**

The transportation plan assumes some drastic increases in the bus service that would be enhanced through increased frequencies or headways on existing routes, adding reverse

**INTERMODAL TRANSIT CENTERS**

Two intermodal centers are being constructed in Utah County. Both sites have been substantially purchased and construction is anticipated very soon. The Provo Intermodal site is located at 600 South University Ave and



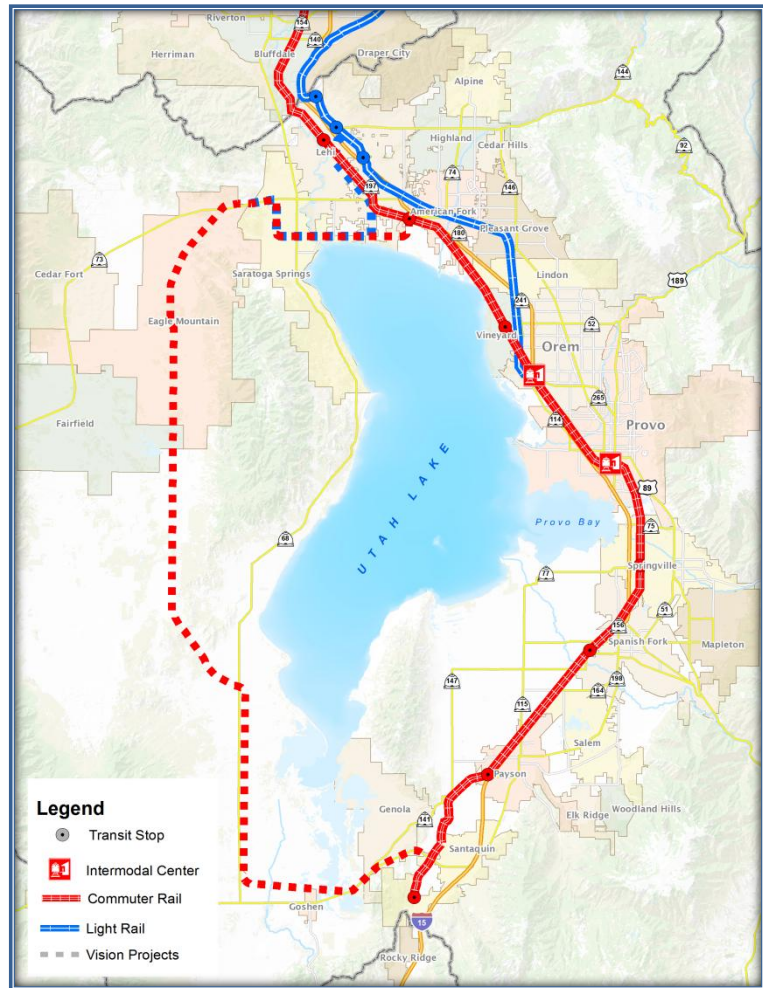
the Orem Intermodal site is located on the Utah Valley University campus west of I-15. UTA bus, Commuter Rail, Bus Rapid Transit, Amtrak, perhaps local taxi companies, Greyhound Bus Lines, and bus tour operators could serve the centers. The intermodal centers would also be built with adjoining park and ride lots. The proposed plan also includes pedestrian enhancements through the adjoining neighborhoods, bicycle facilities, mixed land use, and transit oriented development. It is anticipated that the location will serve passengers on express buses to and from Salt Lake City, a BRT line through Provo and Orem, and a commuter train to Salt Lake City and Ogden. The Provo Intermodal site obtained a HUD livability grant that will help build the station site. Also the city of Provo has implemented a transit oriented development zone around the site to encourage uses that are consistent with the type of development that is desirable around a significant rail station.

### **TRAX LIGHT RAIL**

Residential growth in south Salt Lake County and the north part of Utah County is proposed to continue to merge together becoming one continuous urban area. Dense commercial areas are also proposed to locate in the area creating better transit opportunities. It is determined that a 16.5 mile extension of light rail from the planned TRAX line to Draper south ending at the Orem Intermodal Transit Center would greatly enhance countywide mobility and provide high speed transit between central and northern Utah County and between northern Utah and southern Salt Lake counties. It is anticipated that light rail would be operational by the year 2040. Future extension of light rail

is shown as a vision project extending through Lehi, Saratoga Springs, and Eagle Mountain. More study is needed to determine the location of this extension and its timing.

### **TRAX AND COMMUTER RAIL**



### **FRONT RUNNER COMMUTER RAIL**

For the past few years UTA has been constructing the Front Runner Commuter Rail line connecting Salt Lake City to Provo. The line is a total of 44 miles with 22 miles within Utah County. The project is about 75% complete at the time of this writing. It is anticipated that commuter rail will be operational by 2013. Commuter rail is a passenger locomotive train that goes at a top speed of about 89 miles per

hour and with stations placed at a minimum of five miles apart. Commuter rail is generally used for longer distance commutes. The second phase of commuter rail would expand the line south of Provo to the south part of Utah County likely ending in Payson. A third phase would continue the line to Santaquin.

**EXPANDED TRANSIT MAINTENANCE FACILITY**

The expansion in bus service will require the addition of approximately 60-75 vehicles to the existing fleet and would also necessitate the expansion of the UTA maintenance facility on Geneva RD in Orem. The facility would need additional bus stalls for parking, more maintenance and fuel bays and more space in the building for operators and staff. UTA owns land at the existing location that is available to accommodate these additions. Furthermore this project might be done in conjunction with the BRT project in Provo and Orem as this project would bring extra vehicles that would require a modification of the existing facility.

### **BACKGROUND**

Road and transit projects in the Metropolitan Transportation Plan will have both positive and negative impacts to the social and physical environment of the region. For example, highway and transit improvements will reduce congestion, increase accessibility, result in fewer accidents, and improve air quality; however the construction or upgrading of highways may result in increased noise, relocation of residential or commercial properties, and the destruction of wetlands.

### **SUMMARY OF PRESENT CONDITIONS**

Most of the communities in Utah County have developed as rural, agriculturally based enclaves and most remain as low-density, suburban communities today. The 2010 GOPB projections estimate the MPO's current population to be 560,000. 2040 Utah County projections are estimated at 1.1 million, a doubling of our residents in 30 years. The growth of the county to date has had significant impact on the natural environment; the next 30 years of growth are predicated to have a similar level of impact.

### **PROJECTION OF CHANGE OR TRANSFORMATION**

365 acres of existing wetlands may be impacted, 73 projects may increase noise near residential neighborhoods, 59 projects may relocate residential or commercial businesses, 20 projects may impact existing agriculture protection easements, 3 projects may impact or disturb an existing EPA study sites, and projects may impact 587 historic or public recreation areas etc.

The MPO encourages local government projects to mitigate these impacts by working with UDOT, US Army Corps of Engineers, Utah DWR, US fish and Wildlife, and the State Historic Preservation Officer to mitigate impacts in concert with projects established by these organization in high value locations such as: the 120 acre Lindon Wetland Mitigation Bank, Utah Historic Bridge Survey and the June Sucker Recovery Program near Provo.

### **CURRENT AND EMERGING ISSUES**

The MPO is required to consult with state and local agencies in the development of the MTP. The MPO compares its project both individually and cumulatively with federal state and local conservation plans as well as inventories of natural or historic resources. The MPO is also required to discuss any potential environmental mitigation activities that may have a potential to restore and maintain the environmental functions of resources affected by the MTP.

### ***FORMAL CONSERVATION PLANS AND POTENTIAL ENVIRONMENTAL MITIGATION ACTIVITIES***

#### ***JUNE SUCKER (FISH) RECOVERY***

The June Sucker Recovery Implementation Program is a multi-agency cooperative effort designed to coordinate and implement recovery actions for June sucker. The program also recognizes the need for continued operation of existing water projects and development to meet future water needs. The program takes an adaptive management approach wherein biological information is gathered, reviewed and incorporated into the program on a continual basis. The program works to balance and accommodate water resource needs of the human population with June sucker recovery efforts. While the priority is on June sucker, the program also provides a mechanism to promote



the recovery of other federally listed species, and prevent the need for further listings in the Utah Lake Drainage Basin.

The June Sucker Recovery Implementation Program has two main goals:

- Recover the June sucker to the extent that it no longer requires protection under the Endangered Species Act.
- Allow for the continued operation of existing water facilities and future water development of water resources for human use.

#### **UTAH HISTORIC BRIDGE SURVEY**

The bridge survey guides UDOT's environmental staff and consultants in determining whether a bridge is eligible for listing on the National Register of Historic Places, a required step in the agency's efforts to comply with state and federal environmental laws. A "property," as a bridge or building is known, must generally be 50 years old, although UDOT uses 45 years as a cut-off date in order to accommodate the length of time between the completion of environmental documents and the beginning of construction. Second, a property must have historical integrity, meaning that the features that render it historically significant are still intact and visible. "Historical" integrity should not be confused with "functional" or "structural" integrity. And third, a property must be significant for its association with historic trends, important events or people, or noteworthy for its construction or design.

#### **LINDON WETLAND MITIGATION BANK**

The U.S. Army Corps of Engineers regulates wetland activities with guidance from the Environmental Protection Agency and the U.S. Fish and Wildlife Service. These agencies, along with UDOT prepared a Mitigation Banking Instrument to create a 120 acre Mitigation Bank that serves UDOT projects in Northern Utah County.

The Northern Utah County Mitigation Bank (NUCMB) will eventually provide 75 wetland credits that will serve UDOT projects such as Pioneer Crossing, I-15 Core, and Geneva Road expansion. The credits provide a cost effective means of mitigating wetland impacts as well as an efficient permitting method that will accelerate the permitting process by at least one year for each project. Ultimately the NUCMB saves UDOT millions of dollars in mitigation costs as well as years in delays due to permitting requirements.

#### **UTAH LAKE WETLAND PRESERVE**

The Utah Lake Wetland Preserve, a network of wetland and interspersed upland habitats near the southern end of Utah Lake, is being established to partially mitigate for past and anticipated future impacts of Central Utah Project water development. The Preserve will provide habitat for wetland- and upland-dependent species and will ultimately be managed by the Utah Division of Wildlife Resources.

The Utah Reclamation Mitigation and Conservation Commission entered into an agreement in 1996 with The Nature Conservancy, Utah Division of Wildlife Resources, U.S. Department of the Interior, Bureau of Reclamation, Bureau of Land Management, and U.S. Fish and Wildlife Service for acquisition and management at the Utah Lake Wetland Preserve. The Preserve consists of Goshen Bay and Benjamin Slough.

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## **PLANNING AND ENVIRONMENT LINKAGES**

FHWA encourages an attempt to link this early environmental work (mentioned above) to the ultimate construction of the project through an initiative called Planning and Environment Linkages (PEL). This approach to transportation decision-making that considers environmental,

community, and economic goals early in the planning stage and carry them through project development, design, and construction. The goal of PEL is to create a seamless decision-making process that minimizes duplication of effort, promotes environmental stewardship, and reduces delays from planning to project implementation. PEL lays the foundation for a broad consensus on goals and priorities for transportation related processes.

### **GOALS OF THE MPO PEL**

The MPO Planning and Environmental Linkage efforts will concentrate on the following Goals:

1. Create and maintain a Project File for each MTP Transportation Project from its inception, studies, requests, previous MTP editions, comments from public resource agencies etc. This documentation will explain the various activities including the public and resource management agency involvement that have occurred in the development of the project as part of the MPO planning process. The goal is to document any planning-level information to NEPA standards so this information can be used as a foundation for the NEPA scoping process and appended or reference in any future NEPA document.
2. During MPO studies the consultant or MPO staff will document other alternatives considered and why they were not moved forward. The planning level solutions screening and evaluation is similar to that done in NEPA in order to select the preferred alternative. However, in NEPA, alternatives to solve just one problem within that overall system are evaluated. A solutions evaluation and screening done in planning can be summarized and incorporated by reference into NEPA without a need for the alternatives study to be “redone.” This information is summarized in the “Project File.”

3. Develop a “Planning Level Problem Statement” of Transportation Project during MPO studies in the development of the MTP. This will be carried it into MTP then into NEPA as the Purpose and Need. Time and energy spent during the MPO MTP development can be used to reduce time and energy at the beginning of NEPA on this task. This planning level Problem Statement captures in a clear and succinct format, information from planning that NEPA practitioners can incorporate into their purpose and need. All first Phase projects will have a Planning Level Problem Statement summarized on the Project Fact Sheet that also includes AADT by Phase, purpose need, study origin, sponsor, impacts benefits, typical cross section and any proposed bicycle pedestrian improvements.

### **SECTION RECOMMENDATION**

The impacts of these MTP projects need to be mitigated and coordinated to achieve the highest value of the reinvestment. Projects that could have major impacts were identified so that sponsors can avoid, minimize, repair, restore, reduce over time, and account for the cost as they develop their plans.

### **STRATEGIES TO IMPLEMENT PLAN**

#### **RECOMMENDATIONS**

Project fact sheets for all first phase projects will identify project impacts and provide a suggestion of potential environmental mitigation activities and potential areas to carry out these activities out. The project sponsor should be able to plan for and effectively mitigate any negative environmental impact of a project.

### IMPACT TABLES

Phase one project (2011-2020) that have begun environmental and engineering phase of their development are not listed in the impacts tables due to the more detailed information now available from their project sponsor. They have been left on the maps to show their approximate location in relation to the other projects and environmental themes. First phase projects that have started have more detailed environmental and engineering are:

#### **ROAD AND HIGHWAYS PROJECTS**

- #1 I-15 Freeway CORE Reconstruction - Lehi to Spanish Fork
- #2 I-15 Freeway Reconstruction - Draper to Lehi
- #3 I-15 Widening - Spanish Fork to Payson
- #4 I-15 Benjamin Interchange
- #5 I-15 Orem 800 South Interchange
- #6 I-15 Payson Main Street Interchange
- #8 Lehi 2100 North Frontage Roads
- #9 Timpanogos Highway / SR-92 - Lehi to Highland
- #33 Geneva Road / SR-114 - Orem
- #34 Geneva Road / Pleasant Grove 100 East Connection
- #37 North County Blvd (Utah County 4800 West)
- #48 Westside Connector Road
- #67 Lehi 2300 West
- #73 North West Connector Road - Provo

#### **TRANSIT PROJECTS**

- #T1 Commuter Rail



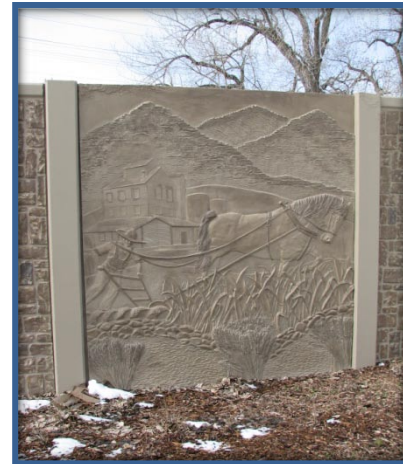
## **COMMUNITY IMPACTS AND BENEFITS**



### **NOISE IMPACTS**

Noise impacts vary based upon the characteristics of traffic, roadway/transit facility, and adjacent land uses. The relevant traffic characteristics are traffic volume, speed, and vehicle mix. The roadway characteristics effecting noise include grades and the presence or absence of noise barriers. Also important are the noise sensitivity of adjacent land uses, the distance between the roadway and the land use, and the design and construction of affected buildings.

Most projects will have relatively minor or no impact on existing developed areas. Listed below are the projects having the greatest potential for noise impacts upon adjacent communities identified through a GIS analysis of 750' buffer from the center point of the building foot print to any project ROW. The projects are on the list because they pass through residential zoned areas, near schools, care facilities, hospitals and are high speed, high volume facilities - freeways and arterials.



**SOUND WALL**

Exact project noise impact assessments and mitigation measures may be determined at a later date during project design. By shifting the highway alignment away from noise sensitive land uses, depressing the roadway, or installing noise barriers between the highway and the sensitive areas, adverse noise effects may be significantly reduced.

### **NOISE IMPACTS PROJECTS**

| <b>MTP #</b> | <b>NAME</b>                                                             | <b>ZONERS<br/>RESIDENTIAL</b> | <b>SCHOOLS, CARE<br/>CENTERS,<br/>HOSPITALS</b> |
|--------------|-------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|
| 10           | Hidden Valley Expressway / Freeway                                      | X                             |                                                 |
| 16           | Lake Mountain Expressway - Eagle Mtn                                    | X                             |                                                 |
| 17           | Lake Mountain Freeway / Expressway - Saratoga Springs to Eagle Mountain | X                             |                                                 |
| 18           | Lehi 2100 North Expressway - Saratoga Springs to Lehi                   | X                             |                                                 |
| 19           | Mountain View Freeway Salt Lake County to Saratoga Springs              | X                             |                                                 |
| 20           | Nebo Beltway Expressway - Payson to Woodland Hills                      | X                             | X                                               |
| 21           | Timpanogos Highway / SR-92 - Lehi to Highland                           | X                             | X                                               |
| 22           | US-6 - Spanish Fork                                                     | X                             | X                                               |
| 23           | I-15 Freeway Widening - Payson to Santaquin                             | X                             | X                                               |
| 24           | Mountain View Freeway (Foothill) - Saratoga Springs                     | X                             |                                                 |

# IMPACTS AND BENEFITS

| MTP # | NOISE IMPACTS CONTINUED                                   | ZONERS<br>RESIDENTIAL | SCHOOLS, CARE<br>CENTERS,<br>HOSPITALS |
|-------|-----------------------------------------------------------|-----------------------|----------------------------------------|
| 25    | Pioneer Crossing / Vineyard Expressway                    | X                     | X                                      |
| 26    | South Wasatch Freeway - Payson to Provo                   | X                     |                                        |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                | X                     |                                        |
| 36    | SR-198 - Spanish Fork to Payson                           | X                     | X                                      |
| 38    | Orem 800 North / SR-52                                    | X                     | X                                      |
| 39    | Pioneer Crossing Extension - Saratoga Springs             | X                     |                                        |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain | X                     |                                        |
| 41    | Provo 500 West                                            | X                     | X                                      |
| 42    | Redwood Road / SR-68 - Saratoga Springs                   | X                     |                                        |
| 43    | Santaquin Main Street / US-6                              |                       | X                                      |
| 44    | State Street / US-89 - Orem to Pleasant Grove             | X                     | X                                      |
| 45    | State Street / US-89 - Pleasant Grove to American Fork    |                       | X                                      |
| 46    | State Street / US-89 - American Fork to Lehi              | X                     |                                        |
| 47    | University Parkway / SR-265 - Orem to Provo               | X                     | X                                      |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem      | X                     |                                        |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                      | X                     | X                                      |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146            | X                     | X                                      |
| 53    | Pony Express Parkway - Eagle Mountain                     | X                     | X                                      |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove | X                     |                                        |
| 55    | Provo 800 / 820 North / 700 North                         | X                     | X                                      |
| 56    | Redwood Road / SR-68 - Saratoga Springs                   | X                     |                                        |
| 57    | Springville 400 South / SR-77                             | X                     |                                        |
| 59    | US-6 - Santaquin to Elberta                               | X                     | X                                      |
| 60    | US-89 - Mapleton                                          | X                     |                                        |
| 61    | SR-73 - Saratoga Springs to Eagle Mountain                | X                     | X                                      |
| 62    | SR-198 - Payson to Santaquin                              | X                     | X                                      |
| 63    | Orem 800 North / SR-52                                    | X                     | X                                      |
| 64    | Orem 800 North / SR-52                                    | X                     |                                        |
| 65    | University Ave - Provo                                    | X                     | X                                      |
| 66    | Elk Ridge Drive - Salem                                   | X                     |                                        |
| 68    | Meadows Connection Road                                   | X                     |                                        |
| 69    | Orem 1600 North                                           | X                     | X                                      |
| 72    | Provo Center Street / SR-114 - Provo                      | X                     | X                                      |
| 74    | Spanish Fork Center Street                                | X                     | X                                      |
| 76    | American Fork 100 East / Alpine Highway / SR-74           | X                     | X                                      |
| 77    | Canyon Crest Drive - Highland to Alpine                   | X                     |                                        |
| 78    | Eagle Mountain Blvd                                       | X                     |                                        |
| 79    | Lehi Main Street / SR-73                                  | X                     | X                                      |
| 80    | Orem 1600 North   800 East                                | X                     | X                                      |
| 81    | Orem 800 South / Provo 3700 North                         | X                     |                                        |
| 82    | Orem Center Street                                        | X                     | X                                      |
| 83    | Pacific Ave Bypass Road - American Fork                   | X                     | X                                      |
| 84    | Ranches Parkway - Eagle Mountain                          | X                     |                                        |
| 85    | Springville 1600 South / Spanish Fork 2700 North          | X                     |                                        |
| 86    | UC 12400 South                                            | X                     |                                        |

## IMPACTS AND BENEFITS

| MTP # | NOISE IMPACTS CONTINUED                                  | ZONERS<br>RESIDENTIAL | SCHOOLS, CARE<br>CENTERS,<br>HOSPITALS |
|-------|----------------------------------------------------------|-----------------------|----------------------------------------|
| 87    | Woodland Hills Drive - Salem                             | X                     |                                        |
| 88    | Eagle Mountain 3400 North                                | X                     |                                        |
| 89    | Eagle Mountain 5600 North                                | X                     |                                        |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | X                     |                                        |
| T2    | Commuter Rail - Provo to Payson                          | X                     | X                                      |
| T3    | Commuter Rail - Payson to Santaquin                      | X                     |                                        |
| T5    | Light Rail - Draper to Orem                              | X                     | X                                      |



**PIONEER CROSSING BLVD SOUND WALL, LEHI**

Limited access highways most frequently and reasonably incorporate noise barriers. Noise mitigation is less effective or not effective for other roadway projects, because multiple access points reduce the effectiveness of mitigation. UDOT's noise mitigation policy states that: "mitigation will not be incorporated into sections of projects where local government has not already approved development at the time highway facilities construction begins. Therefore, the affected city or county should require new developments to give proper consideration to the noise effects of the highway facilities as development occurs. These considerations could include proper setback distances from the noise source, walls, or berms between the noise source and receptor."

### CONCLUSIONS

- Control access facilities should be investigated for noise impacts alleviation.
- Mitigation for potential noise should be included in the project cost estimates and design.
- Noise sensitive land uses such as those listed above should be permitted only at suitable distances from these facilities.
- Where possible, landscaping, and compatible land uses could eliminate or reduce noise and maintain quality of life near transportation facilities.



**PIONEER CROSSING BLVD SOUND WALL, LEHI**





## SCHOOL IMPACTS

The 2004 AASHTO Guide for planning, design, and operation of pedestrian facilities suggest that the majority of pedestrians are willing to walk ½ mile to reach a destination. Transportation project impacts to school safety



### WALKING TO SCHOOL SAFELY

vary according to the nature of the new roadway, roadway facility change, the type of school involved, and the traffic exposure student pedestrian's encounter. This analysis is

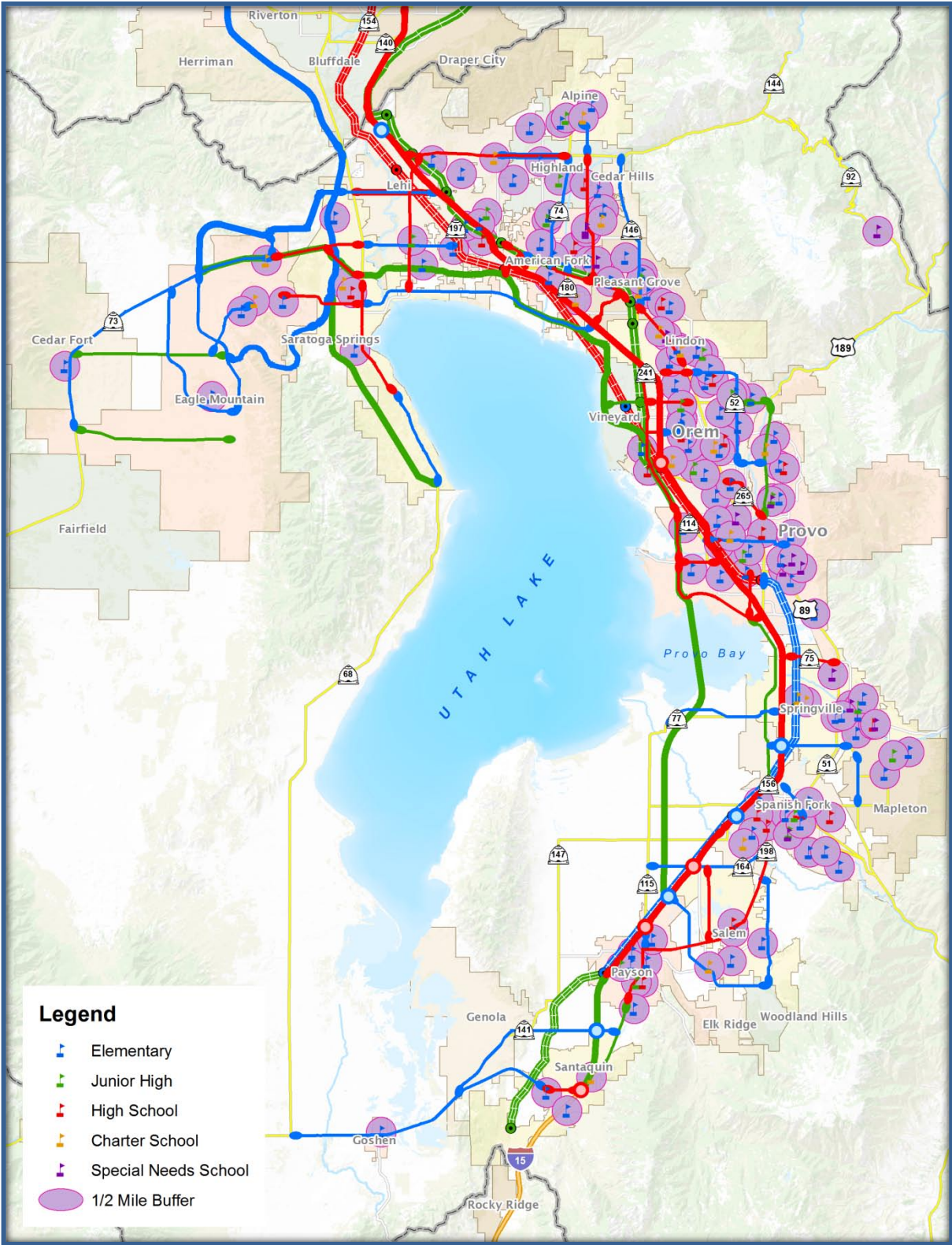
limited to identifying projects with immediate adjacent impacts (planned ROW intersects with school property) and road/transit projects within a half mile of an existing school center point of foot print.

Major 4-lane and above facilities carrying significant traffic volumes at relatively higher speeds could potentially affect school safety. Specific project impacts and mitigation measures should be identified in the environmental phase of the project's development. Potential mitigation measures may be identified during the specific project impact assessment phase and may include the provision of pedestrian overpasses and/or new busing areas.

## SCHOOL IMPACTS PROJECTS

| MTP # | NAME                                                       | CONTIGUOUS TO A SCHOOL | SCHOOLS WITHIN 1/2 MILE BUFFER |
|-------|------------------------------------------------------------|------------------------|--------------------------------|
| 19    | Mountain View Freeway Salt Lake County to Saratoga Springs |                        | 2                              |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills         | 1                      | 1                              |
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland              |                        | 2                              |
| 22    | US-6 - Spanish Fork                                        |                        | 4                              |
| 23    | I-15 Freeway Widening - Payson to Santaquin                |                        | 1                              |
| 24    | Mountain View Freeway (Foothill) - Saratoga Springs        |                        | 1                              |
| 25    | Pioneer Crossing / Vineyard Expressway                     |                        | 5                              |
| 26    | South Wasatch Freeway - Payson to Provo                    |                        | 2                              |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                 |                        | 1                              |
| 36    | SR-198 - Spanish Fork to Payson                            | 2                      | 9                              |
| 38    | Orem 800 North / SR-52                                     |                        | 1                              |
| 39    | Pioneer Crossing Extension - Saratoga Springs              |                        | 1                              |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain  |                        | 2                              |
| 41    | Provo 500 West                                             |                        | 1                              |
| 42    | Redwood Road / SR-68 - Saratoga Springs                    |                        | 2                              |
| 43    | Santaquin Main Street / US-6                               |                        | 1                              |
| 44    | State Street / US-89 - Orem to Pleasant Grove              | 1                      | 6                              |
| 45    | State Street / US-89 - Pleasant Grove to American Fork     |                        | 3                              |
| 47    | University Parkway / SR-265 - Orem to Provo                |                        | 1                              |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                       |                        | 2                              |
| 51    | Payson Main Street / SR-115                                |                        | 3                              |
| 52    | Pleasant Grove 100 East / Canyon Road / HWY 146            | 3                      | 5                              |

## SCHOOL IMPACTS MAP



| MTP # | SCHOOL IMPACTS CONTINUED                         | CONTIGUOUS TO A SCHOOL | SCHOOLS WITHIN 1/2 MILE BUFFER |
|-------|--------------------------------------------------|------------------------|--------------------------------|
| 53    | Pony Express Parkway - Eagle Mountain            |                        | 2                              |
| 55    | Provo 800 / 820 North / 700 North                |                        | 6                              |
| 59    | US-6 - Santaquin to Elberta                      |                        | 2                              |
| 61    | SR-73 - Saratoga Springs to Eagle Mountain       |                        | 1                              |
| 62    | SR-198 - Payson to Santaquin                     |                        | 2                              |
| 63    | Orem 800 North / SR-52                           |                        | 3                              |
| 65    | University Ave - Provo                           |                        | 6                              |
| 69    | Orem 1600 North                                  |                        | 2                              |
| 71    | Pleasant Grove Blvd                              |                        | 1                              |
| 72    | Provo Center Street / SR-114 - Provo             |                        | 2                              |
| 74    | Spanish Fork Center Street                       | 1                      | 3                              |
| 75    | Springville 1400 North / SR-75                   |                        | 1                              |
| 76    | American Fork 100 East / Alpine Highway / SR-74  |                        | 6                              |
| 77    | Canyon Crest Drive - Highland to Alpine          |                        | 1                              |
| 78    | Eagle Mountain Blvd                              |                        | 1                              |
| 79    | Lehi Main Street / SR-73                         |                        | 2                              |
| 80    | Orem 1600 North / 800 East                       | 2                      | 8                              |
| 81    | Orem 800 South / Provo 3700 North                |                        | 1                              |
| 82    | Orem Center Street                               | 1                      | 4                              |
| 83    | Pacific Ave Bypass Road - American Fork          |                        | 2                              |
| 84    | Ranches Parkway - Eagle Mountain                 |                        | 1                              |
| 85    | Springville 1600 South / Spanish Fork 2700 North |                        | 1                              |
| 87    | Woodland Hills Drive - Salem                     |                        | 1                              |
| 89    | Eagle Mountain 5600 North                        |                        | 1                              |
| T2    | Commuter Rail - Provo to Payson                  |                        | 5                              |
| T5    | Light Rail - Draper to Orem                      | 2                      | 13                             |

## CONCLUSION

- Signage near school areas should be consistent with the 2004 AASHTO guidelines.
- Pedestrian and bicycle facilities are being planned linking schools with residential areas helping provide safe routes to school.
- Mountainland and city staffs work with school district to implement Safe Routes to School.
- Safe Routes to Schools program promotes walking and biking to school through education and incentives that show how much fun it can be. The program also addresses the safety

concerns of parents by encouraging greater enforcement of traffic laws, educating the public, and exploring ways to create safer streets. For more information see [www.saferoutestoschools.org](http://www.saferoutestoschools.org)



**CROSSING GUARD HELPS CHILDREN  
CROSS A BUSY ROAD**





## LAND USE

The land use characteristics of the Provo / Orem Urbanized Area play a key role in determining the travel demands to the year 2030. The relationship between transportation and land development is very complex and reciprocal; on one hand land use effects travel decisions and facilities while travel decisions and facilities affect land use.

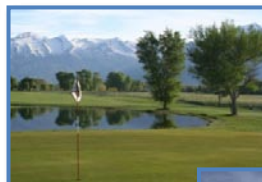
Local governments, such as counties and cities, are responsible for land use planning in Utah. As a part of this responsibility, cities and counties must prepare a general plan (often referred to as a comprehensive or master plan). The plans contain goals, objectives and policies relating to the pattern, density and type of future land use each community envisions. Most of the developable area is planned for low-density residential (2-3 homes per acre). Some higher densities are planned, but the southern part of Utah County is zoned mostly for lower densities. Industrial land uses are planned for the 1-15 corridor with business parks located in American Fork, Orem, Provo, and Springville. Areas of commercial/retail land use include the State Street corridor and concentrations in Provo with each community identifying small concentrations in town centers.

Past trends in land use have resulted in dispersed or low-density urban development patterns in Utah Valley. These patterns have not just occurred by chance, but rather by design. The public has overwhelmingly built and bought single-family homes, as well as personal mobility facilitated by the private automobile. Low-density development is most conveniently served by the automobile and less effectively served by mass transit modes. This has been true for most of America and

predominantly for the suburban areas of Utah County.

Mountainland has coordinated transportation planning with local established land use plans (Via Quadrant Studies). The adopted local government land use plans are integrated into our travel demand model for use in projecting the location of population and economic growth. The development of the MTP recommendations gave significant consideration to the location of future population and employment as they indicate future transportation demand. In developing the MTP, Mountainland has attempted to create a plan that will best support the official long-range land use and transportation policies of the local communities.

Anticipated land use development impacts are primarily associated with new arterial facilities that will provide development access to adjacent property. Existing roads that will be upgraded to primary arterials and new roadway facilities will also have measurable impact on adjacent residential zoned land uses. Significant impacts are predicted to occur and are associated with the following projects.



# IMPACTS AND BENEFITS

## LAND USE IMPACTS PROJECTS

| MTP # | NAME                                                                    | PROJECT CREATES<br>ADDITIONAL<br>ACCESS & NEW<br>DEVELOPMENT<br>OPPORTUNITY | PROJECT IMPACTS<br>EXISTING<br>NEIGHBORHOOD |
|-------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------|
| 10    | Hidden Valley Expressway / Freeway                                      | X                                                                           |                                             |
| 11    | I-15 / Lehi 4000 Interchange                                            | X                                                                           |                                             |
| 12    | I-15 / Nebo Beltway Expressway Interchange - Payson                     | X                                                                           |                                             |
| 13    | I-15 / Spanish Fork Center Street Interchange                           | X                                                                           | X                                           |
| 14    | I-15 / Springville 1600 South / Spanish Fork North Interchange          | X                                                                           |                                             |
| 15    | I-15 / UC 12400 South Interchange                                       | X                                                                           |                                             |
| 16    | Lake Mountain Expressway - Eagle Mountain                               | X                                                                           |                                             |
| 17    | Lake Mountain Freeway / Expressway - Saratoga Springs to Eagle Mountain | X                                                                           |                                             |
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi                   | X                                                                           |                                             |
| 19    | Mountain View Freeway Salt Lake County to Saratoga Springs              | X                                                                           |                                             |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills                      | X                                                                           | X                                           |
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland                           | X                                                                           | X                                           |
| 24    | Mountain View Freeway (Foothill) - Saratoga Springs                     | X                                                                           |                                             |
| 25    | Pioneer Crossing / Vineyard Expressway                                  | X                                                                           |                                             |
| 26    | South Wasatch Freeway - Payson to Provo                                 | X                                                                           |                                             |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                              |                                                                             | X                                           |
| 36    | SR-198 - Spanish Fork to Payson                                         |                                                                             | X                                           |
| 39    | Pioneer Crossing Extension - Saratoga Springs                           | X                                                                           |                                             |
| 41    | Provo 500 West                                                          | X                                                                           | X                                           |
| 45    | State Street / US-89 - Pleasant Grove to American Fork                  |                                                                             | X                                           |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem                    |                                                                             | X                                           |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                                    |                                                                             | X                                           |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146                          |                                                                             | X                                           |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove               | X                                                                           | X                                           |
| 55    | Provo 800 / 820 North / 700 North                                       |                                                                             | X                                           |
| 64    | Orem 800 North / SR-52                                                  | X                                                                           |                                             |
| 66    | Elk Ridge Drive - Salem                                                 | X                                                                           |                                             |
| 68    | Meadows Connection Road                                                 | X                                                                           |                                             |
| 69    | Orem 1600 North                                                         |                                                                             | X                                           |
| 72    | Provo Center Street / SR-114 - Provo                                    |                                                                             | X                                           |
| 74    | Spanish Fork Center Street                                              |                                                                             | X                                           |
| 76    | American Fork 100 East   Alpine Highway / SR-74                         |                                                                             | X                                           |
| 77    | Canyon Crest Drive - Highland to Alpine                                 |                                                                             | X                                           |
| 80    | Orem 1600 North   800 East                                              |                                                                             | X                                           |
| 81    | Orem 800 South / Provo 3700 North                                       |                                                                             | X                                           |
| 82    | Orem Center Street                                                      |                                                                             | X                                           |
| 83    | Pacific Ave Bypass Road - American Fork                                 |                                                                             | X                                           |
| 84    | Ranches Parkway - Eagle Mountain                                        | X                                                                           |                                             |
| 85    | Springville 1600 South / Spanish Fork 2700 North                        | X                                                                           | X                                           |
| 86    | UC 12400 South                                                          | X                                                                           | X                                           |
| 87    | Woodland Hills Drive - Salem                                            |                                                                             | X                                           |

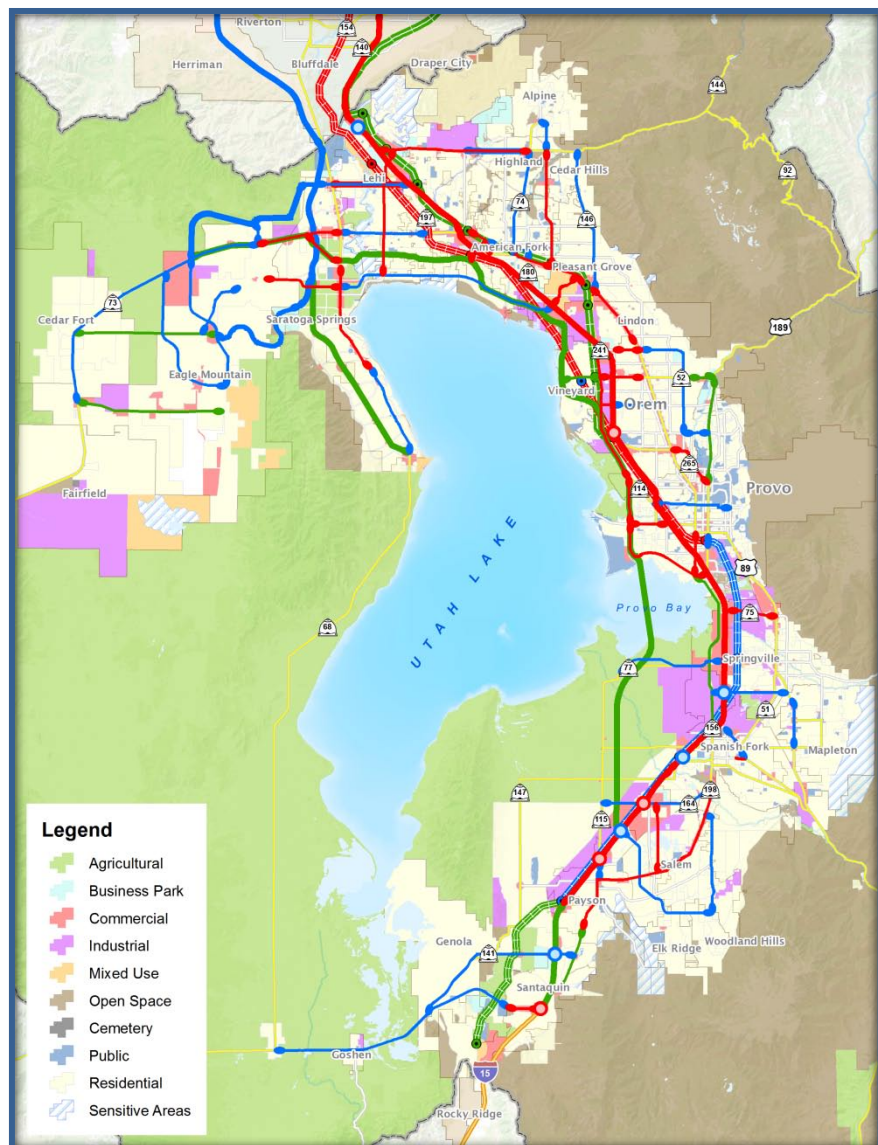
## IMPACTS AND BENEFITS

| MTP # | LAND USE IMPACTS CONTINUED                               | PROJECT CREATES<br>ADDITIONAL<br>ACCESS & NEW<br>DEVELOPMENT<br>OPPORTUNITY | PROJECT IMPACTS<br>EXISTING<br>NEIGHBORHOOD |
|-------|----------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------|
| 88    | Eagle Mountain 3400 North                                | X                                                                           |                                             |
| 89    | Eagle Mountain 5600 North                                | X                                                                           |                                             |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | X                                                                           |                                             |
| T5    | Light Rail - Draper to Orem                              |                                                                             | X                                           |

### CONCLUSIONS

- Dispersed development will result in VMT growth exceeding population growth, Utah County's VMT has increased by 21% in the past decade. The Envision Utah analysis completed by the state with Mountainland's technical support illustrated that this VMT growth could be limited by changing the current trends in land use.
- The growth in VMT results in increased infrastructure costs in both maintenance of existing and new facility construction.

**LAND USE MAP**







### **RELOCATION IMPACTS**

Neighborhood disruption and relocation impacts vary with each transportation project proposed. Relocation impacts are determined if insufficient right-of-way for the new project exist. Neighborhood disruption can also occur when homes, businesses, or community institutions are eliminated from the neighborhood or when the roadway becomes a barrier to neighborhood interaction.

The Relocation Impacts Table lists projects that were determined to have the greatest potential

for relocations. This includes roadway and transit projects that new required ROW would come within 7' of an existing building foot print.

Shifting highway alignment during project design may mitigate relocations. Neighborhood disruptions may also be minimized by providing pedestrian and bike crossing facilities, depressing the roadway to limit its visual intrusion into the community, and/or helping impacted neighborhood resources to re-establish themselves within the same neighborhood.

### **RELOCATION IMPACTS PROJECTS**

| <b>MTP #</b> | <b>NAME</b>                                                | <b>RELOCATION RESIDENTIAL OR COMMERCIAL</b> |
|--------------|------------------------------------------------------------|---------------------------------------------|
| 16           | Lake Mountain Expressway - Eagle Mtn                       | X                                           |
| 18           | Lehi 2100 North Expressway - Saratoga Springs to Lehi      | X                                           |
| 19           | Mountain View Freeway Salt Lake County to Saratoga Springs | X                                           |
| 20           | Nebo Beltway Expressway - Payson to Woodland Hills         | X                                           |
| 21           | Timpanogos Highway / SR-92 - Lehi to Highland              | X                                           |
| 23           | I-15 Freeway Widening - Payson to Santaquin                | X                                           |
| 24           | Mountain View Freeway (Foothill) - Saratoga Springs        | X                                           |
| 25           | Pioneer Crossing / Vineyard Expressway                     | X                                           |
| 26           | South Wasatch Freeway - Payson to Provo                    | X                                           |
| 36           | SR-198 - Spanish Fork to Payson                            | X                                           |
| 39           | Pioneer Crossing Extension - Saratoga Springs              | X                                           |
| 41           | Provo 500 West                                             | X                                           |
| 43           | Santaquin Main Street / US-6                               | X                                           |
| 44           | State Street / US-89 - Orem to Pleasant Grove              | X                                           |
| 45           | State Street / US-89 - Pleasant Grove to American Fork     | X                                           |
| 46           | State Street / US-89 - American Fork to Lehi               | X                                           |
| 49           | Arrowhead Trail / 8000 South - Spanish Fork to Salem       | X                                           |
| 50           | SR-73 - Eagle Mountain to Cedar Fort                       | X                                           |
| 51           | Payson Main Street / SR-115                                | X                                           |
| 52           | Pleasant Grove 100 East / Canyon Road / SR-146             | X                                           |
| 54           | Pony Express Parkway - Saratoga Springs to Pleasant Grove  | X                                           |
| 55           | Provo 800 / 820 North / 700 North                          | X                                           |
| 58           | University Ave / US-189 - Provo                            | X                                           |
| 59           | US-6 - Santaquin to Elberta                                | X                                           |
| 60           | US-89 - Mapleton                                           | X                                           |
| 61           | SR-73 - Saratoga Springs to Eagle Mountain                 | X                                           |
| 62           | SR-198 - Payson to Santaquin                               | X                                           |

## IMPACTS AND BENEFITS

| MTP # | RELOCATION IMPACTS CONTINUED                             | RELOCATION RESIDENTIAL OR COMMERCIAL |
|-------|----------------------------------------------------------|--------------------------------------|
| 63    | Orem 800 North / SR-52                                   | X                                    |
| 65    | University Ave - Provo                                   | X                                    |
| 68    | Meadows Connection Road                                  | X                                    |
| 69    | Orem 1600 North                                          | X                                    |
| 70    | Orem Center Street                                       | X                                    |
| 72    | Provo Center Street / SR-114 - Provo                     | X                                    |
| 74    | Spanish Fork Center Street                               | X                                    |
| 76    | American Fork 100 East   Alpine Highway / SR-74          | X                                    |
| 79    | Lehi Main Street / SR-73                                 | X                                    |
| 80    | Orem 1600 North   800 East                               | X                                    |
| 81    | Orem 800 South / Provo 3700 North                        | X                                    |
| 82    | Orem Center Street                                       | X                                    |
| 83    | Pacific Ave Bypass Road - American Fork                  | X                                    |
| 85    | Springville 1600 South / Spanish Fork 2700 North         | X                                    |
| 86    | Utah County 12400 South                                  | X                                    |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | X                                    |
| T2    | Commuter Rail - Provo to Payson                          | X                                    |
| T3    | Commuter Rail - Payson to Santaquin                      | X                                    |
| T5    | Light Rail - Draper to Orem                              | X                                    |

### CONCLUSION

- Provide sufficient funding for the planning, design, and implementations phases of these projects to accommodate relocations of households and businesses.
- If low-income housing is impacted mitigation measures should be planned to replace the housing in a nearby location.
- If the location of the facility divides an established neighborhood a more preferable alignment/ right-of-way should be sought.
- Pedestrian access, greenways, or trails can be used to connect neighborhoods divided by a facility. Funding of the highway or transit project should include such measures.



## VISUAL IMPACTS

Visual impacts can occur when a transportation project is located in a particular scenic area, when a project is located on a steep grade, when cut and fill practices are employed or when a project is located in an important view shed area. To identify projects that could impact visual quality, Mountainland staff compared the location of the long range projects with the location of Utah designated Scenic Byway or Back ways and slopes greater



**MT TIMPANOGOS**

than 10%, potentially impacting projects are listed on the Visual Impacts.

Specialized design and construction practices can often reduce visual impacts of improved projects. These techniques include texturing hard surfaces, tree planting, landscaping, sculpting earth work to look natural, and using native materials or colors from the surrounding landscape. Specific impact assessment should be determined at a project's initial scoping and environmental review.

## VISUAL IMPACTS PROJECTS

| MTP # | NAME                                                                    | SLOPES 10% AND GREATER | UTAH DESIGNATED SCENIC BYWAY OR BACK WAY |
|-------|-------------------------------------------------------------------------|------------------------|------------------------------------------|
| 10    | Hidden Valley Expressway / Freeway                                      | X                      |                                          |
| 16    | Lake Mountain Expressway - Eagle Mountain                               | X                      |                                          |
| 17    | Lake Mountain Freeway / Expressway - Saratoga Springs to Eagle Mountain | X                      |                                          |
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi                   | X                      |                                          |
| 19    | Mountain View Freeway Salt Lake County to Saratoga Springs              | X                      |                                          |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills                      | X                      |                                          |
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland                           | X                      |                                          |
| 22    | US-6 - Spanish Fork                                                     | X                      |                                          |
| 23    | I-15 Freeway Widening - Payson to Santaquin                             | X                      |                                          |
| 24    | Mountain View Freeway (Foothill) - Saratoga Springs                     | X                      |                                          |
| 25    | Pioneer Crossing / Vineyard Expressway                                  | X                      |                                          |
| 26    | South Wasatch Freeway - Payson to Provo                                 | X                      |                                          |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                              | X                      |                                          |
| 36    | SR-198 - Spanish Fork to Payson                                         | X                      | X                                        |
| 38    | Orem 800 North / SR-52                                                  | X                      |                                          |
| 39    | Pioneer Crossing Extension - Saratoga Springs                           | X                      |                                          |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain               | X                      |                                          |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                                    | X                      |                                          |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146                          | X                      |                                          |
| 53    | Pony Express Parkway - Eagle Mountain                                   | X                      |                                          |



| MTP # | VISUAL IMPACTS CONTINUED                   | SLOPES 10% AND GREATER | UTAH DESIGNATED SCENIC BYWAY OR BACK WAY |
|-------|--------------------------------------------|------------------------|------------------------------------------|
| 55    | Provo 800 / 820 North / 700 North          | X                      |                                          |
| 56    | Redwood Road / SR-68 - Saratoga Springs    | X                      |                                          |
| 59    | US-6 - Santaquin to Elberta                | X                      |                                          |
| 61    | SR-73 - Saratoga Springs to Eagle Mountain | X                      |                                          |
| 62    | SR-198 - Payson to Santaquin               | X                      |                                          |
| 63    | Orem 800 North / SR-52                     | X                      |                                          |
| 64    | Orem 800 North / SR-52                     | X                      |                                          |
| 65    | University Ave - Provo                     | X                      |                                          |
| 80    | Orem 1600 North   800 East                 | X                      |                                          |
| 81    | Orem 800 South / Provo 3700 North          | X                      |                                          |
| 82    | Orem Center Street                         | X                      |                                          |
| 84    | Ranches Parkway - Eagle Mountain           | X                      |                                          |
| 86    | UC 12400 South                             | X                      |                                          |
| 87    | Woodland Hills Drive - Salem               | X                      |                                          |
| 89    | Eagle Mountain 5600 North                  | X                      |                                          |
| T2    | Commuter Rail - Provo to Payson            | X                      |                                          |
| T3    | Commuter Rail - Payson to Santaquin        | X                      |                                          |
| T5    | Light Rail - Draper to Orem                | X                      |                                          |

## CONCLUSION

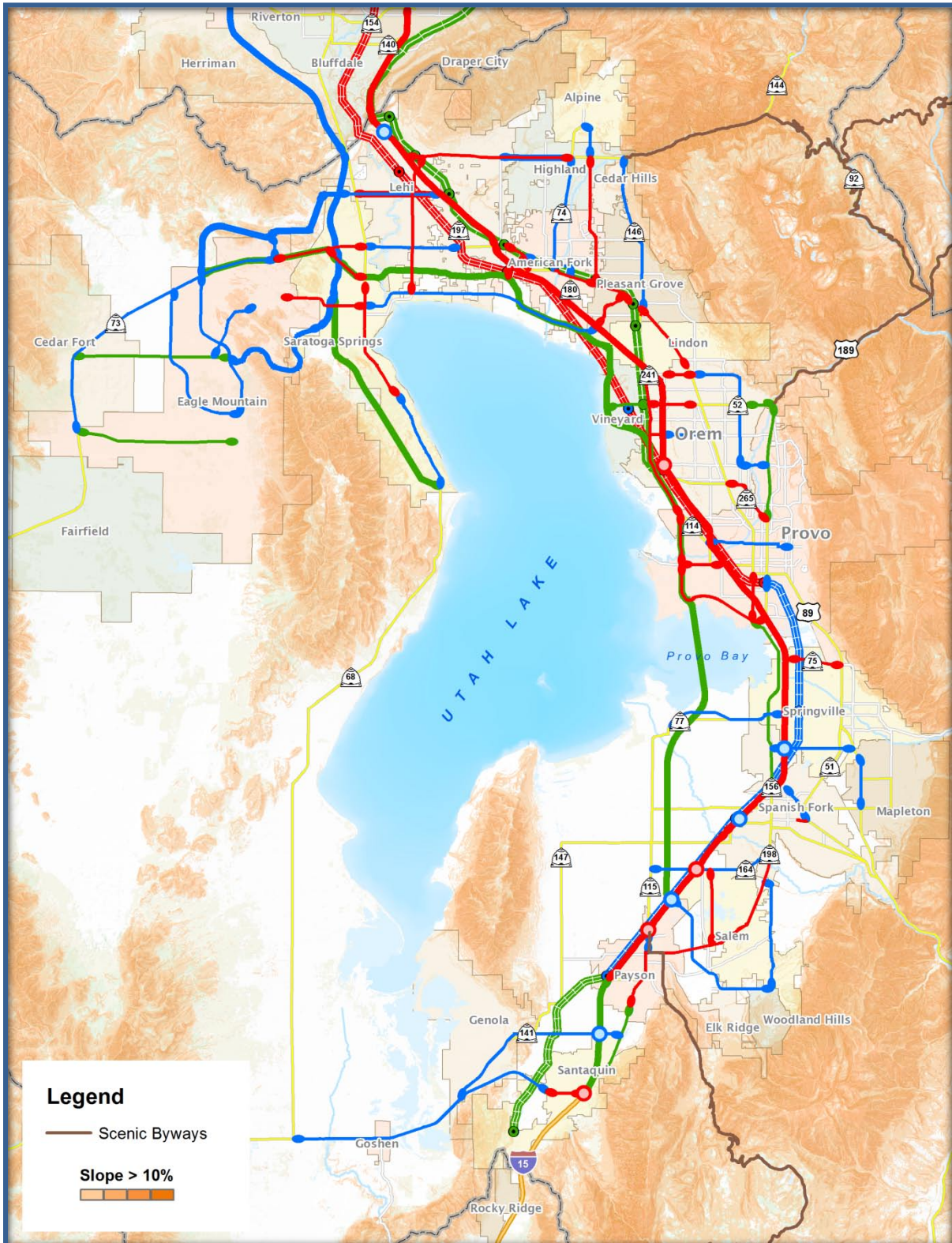
- Mitigation of visual impacts should be included in the project costs for design and construction.
- Public input and comments from citizen groups should be considered in the design of projects in visually sensitive areas.
- Federal Transportation Enhancement funds can be used in conjunction with construction funds in these areas to help fund landscaping, special signage, kiosks etc.
- Art may be used to improve the visual quality of transportation projects; however it is seldom used in our area. Citizen groups could be enlisted to recommend artistic designs appropriate for the projects.



UTAH LAKE

## IMPACTS AND BENEFITS

### VISUAL IMPACTS MAP



**ENVIRONMENT IMPACTS AND BENEFITS****FARMLAND IMPACTS**

The MPO Area has several important tracts and islands of unique, important, and prime farmland as mapped and identified by the important Historical Farmlands of Utah.

The farmland of Utah County has significance beyond its local boundaries. While most of the alfalfa and feed grains such as, winter wheat, and sweet corn are used locally, the specialty crops of apples, pears, and cherries find their way into national and international markets.

In addition, Utah County has designated “Agriculture protection areas” which means a geographic area is granted specific legal

protection for the production of “crops, livestock, and livestock products” or devoted to an agency of the state or federal government.

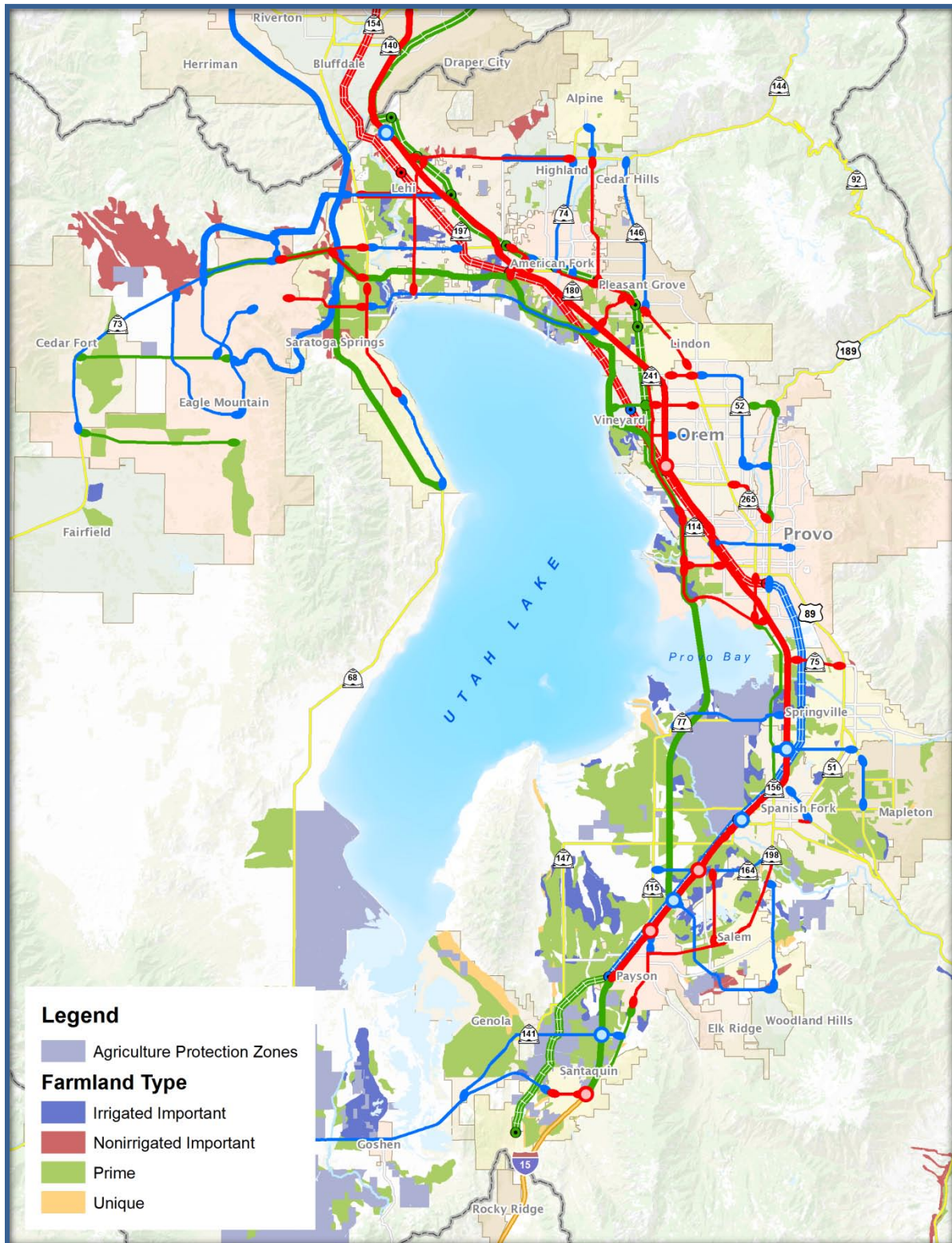
Many projects in the MTP will impact these unique and prime farmlands as well as the agriculture protection areas. These impacts include use of farmland for rights-of-way and the division of large contiguous pieces of farmland into smaller units. Smaller units are not as economically viable for farming. See the table for specific projects and associated impacts. Project ROW on farmland area calculation and whether or not ROW intersected farmland protection area.

**FARMLAND IMPACT PROJECTS**

| MTP # | NAME                                                       | AGRICULTURAL PROTECTION EASEMENT | ACRES OF PRIME & UNIQUE FARMLAND |
|-------|------------------------------------------------------------|----------------------------------|----------------------------------|
| 10    | Hidden Valley Expressway / Freeway                         | X                                | 23.1                             |
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi      |                                  | 12.5                             |
| 19    | Mountain View Freeway Salt Lake County to Saratoga Springs |                                  | 53.0                             |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills         | X                                | 16.8                             |
| 23    | I-15 Freeway Widening - Payson to Santaquin                | X                                | 30.7                             |
| 24    | Mountain View Freeway (Foothill) - Saratoga Springs        |                                  | 32.3                             |
| 25    | Pioneer Crossing / Vineyard Expressway                     | X                                | 86.6                             |
| 26    | South Wasatch Freeway - Payson to Provo                    | X                                | 117.6                            |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                 |                                  | 4.9                              |
| 36    | SR-198 - Spanish Fork to Payson                            |                                  | 21.4                             |
| 39    | Pioneer Crossing Extension - Saratoga Springs              |                                  | 18.5                             |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain  |                                  | 15.9                             |
| 42    | Redwood Road / SR-68 - Saratoga Springs                    |                                  | 23.8                             |
| 44    | State Street / US-89 - Orem to Pleasant Grove              |                                  | 0.3                              |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem       |                                  | 22.5                             |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                       |                                  | 9.9                              |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove  | X                                | 46.7                             |
| 57    | Springville 400 South / SR-77                              | X                                |                                  |
| 59    | US-6 - Santaquin to Elberta                                | X                                | 12.9                             |
| 60    | US-89 - Mapleton                                           |                                  | 0.5                              |



## FARMLAND IMPACT MAP



| MTP # | FARMLAND IMPACT CONTINUED                                | AGRICULTURAL PROTECTION EASEMENT | ACRES OF PRIME & UNIQUE FARMLAND |
|-------|----------------------------------------------------------|----------------------------------|----------------------------------|
| 61    | SR-73 - Saratoga Springs to Eagle Mountain               |                                  | 2.6                              |
| 62    | SR-198 - Payson to Santaquin                             |                                  | 2.8                              |
| 66    | Elk Ridge Drive - Salem                                  |                                  | 6.5                              |
| 68    | Meadows Connection Road                                  | X                                | 2.3                              |
| 71    | Pleasant Grove Blvd                                      |                                  | 5.5                              |
| 72    | Provo Center Street / SR-114 - Provo                     |                                  | 5.1                              |
| 75    | Springville 1400 North / SR-75                           |                                  | 0.1                              |
| 79    | Lehi Main Street / SR-73                                 | X                                |                                  |
| 85    | Springville 1600 South / Spanish Fork 2700 North         |                                  | 0.2                              |
| 86    | UC 12400 South                                           | X                                | 46.4                             |
| 87    | Woodland Hills Drive - Salem                             |                                  | 2.4                              |
| 88    | Eagle Mountain 3400 North                                |                                  | 10.1                             |
| 89    | Eagle Mountain 5600 North                                |                                  | 10.8                             |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | X                                | 12.1                             |
| T2    | Commuter Rail - Provo to Payson                          | X                                | 13.6                             |
| T3    | Commuter Rail - Payson to Santaquin                      | X                                | 10.6                             |
| T5    | Light Rail - Draper to Orem                              |                                  | 1.1                              |



## FARMLAND IN THE MPO

### CONCLUSIONS

- The Farmland map shows how much of Utah County is farmland. Historically this area, on the Valley floor, has been entirely agriculture as there are large areas of high quality soil. The increase in population has led to the conversion of much of the land to residential and the water to industrial and residential uses.
- Transfer of development rights, open space preservation program through the Utah's Quality Growth commission should be pursued for these large parcels and transportation facilities designed to preserve them.
- Project sponsors should consider the implication of the Agriculture protection areas on the project budget and project development time line.





### GEOLOGIC HAZARDS

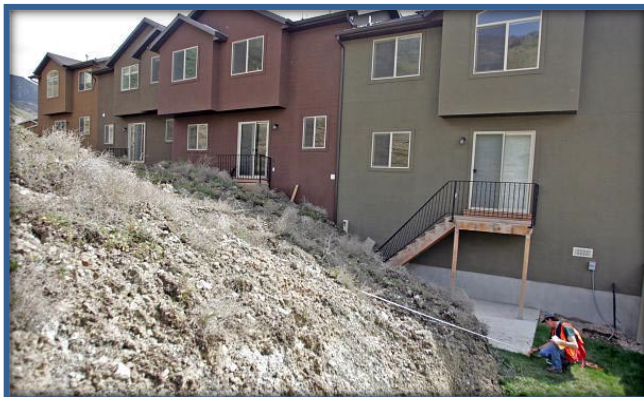
#### ***LIQUEFACTION, DEBRIS FLOW, FAULT LINES***

The Uinta National Forest's steep slopes, created by the Wasatch Fault, run the length of the MPO area. The Wasatch Fault highlights the potential for geologic hazards in the area and the need to consider their potential impact on transportation facilities. As development continues to rise higher on the foothills and towards the shores of Utah Lake several geologic factors should be considered when planning a new highway project. Fault lines of known earthquake activity and its 1000' buffer,

slope hazard or debris flow areas, and high potential liquefaction areas should be avoided. All of these elements are present in the MPO area. Safeguards may be implemented during the project's design phase to lessen the impact of these possible hazards. The "Geologic Hazards Map" illustrates the geologic hazards in relation to the proposed projects. The following list was generated using a comparison of known geologic hazards and the proposed transportation projects.

### GEOLOGIC HAZARDS PROJECTS

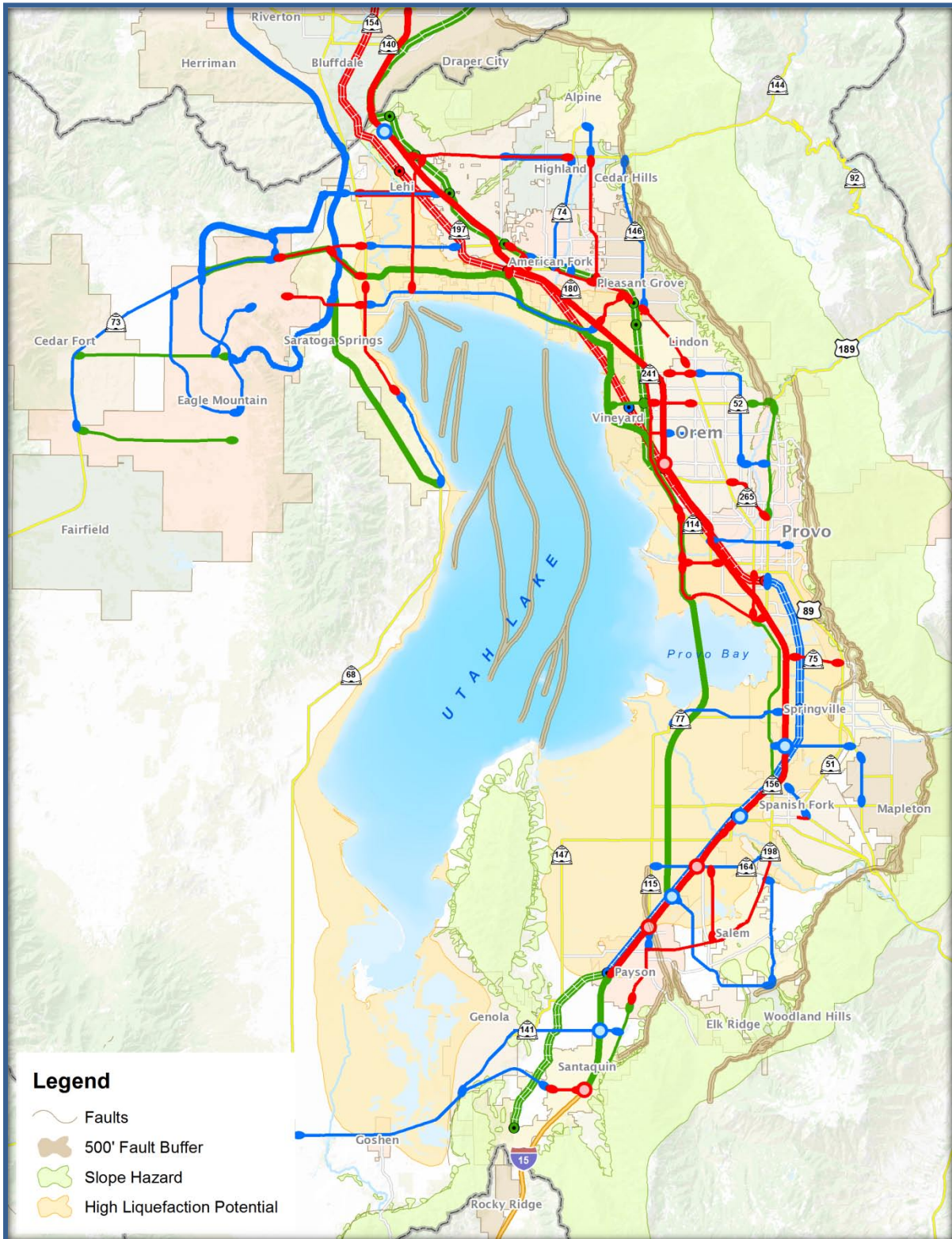
| MTP # | NAME                                                      | EARTHQUAKE FAULT LINE / BUFFER ZONE | HIGH LIQUEFACTION POTENTIAL | SLOPE / DEBRIS FLOW AREA |
|-------|-----------------------------------------------------------|-------------------------------------|-----------------------------|--------------------------|
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi     |                                     | X                           | X                        |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills        | X                                   | X                           | X                        |
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland             |                                     |                             | X                        |
| 22    | US-6 - Spanish Fork                                       |                                     | X                           |                          |
| 23    | I-15 Freeway Widening - Payson to Santaquin               |                                     |                             | X                        |
| 25    | Pioneer Crossing / Vineyard Expressway                    |                                     | X                           |                          |
| 26    | South Wasatch Freeway - Payson to Provo                   |                                     | X                           |                          |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                |                                     | X                           |                          |
| 36    | SR-198 - Spanish Fork to Payson                           | X                                   | X                           |                          |
| 39    | Pioneer Crossing Extension - Saratoga Springs             |                                     | X                           |                          |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain |                                     | X                           |                          |
| 41    | Provo 500 West                                            |                                     | X                           |                          |
| 42    | Redwood Road / SR-68 - Saratoga Springs                   |                                     | X                           |                          |



**CEDAR HILLS LAND SLIDE IN 2005**  
MOVED DOWN THE HILLSIDE AND  
SLAMMED INTO NEWLY BUILT CONDO  
UNITS



## GEOLOGIC HAZARDS MAP



### GEOLOGIC HAZARDS PROJECTS

| MTP # | GEOLOGIC HAZARDS CONTINUED                                | EARTHQUAKE<br>FAULT LINE /<br>BUFFER ZONE | HIGH<br>LIQUEFACTION<br>POTENTIAL | SLOPE /<br>DEBRIS<br>FLOW AREA |
|-------|-----------------------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------|
| 45    | State Street / US-89 - Pleasant Grove to American Fork    |                                           | X                                 |                                |
| 46    | State Street / US-89 - American Fork to Lehi              |                                           | X                                 |                                |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem      |                                           | X                                 |                                |
| 51    | Payson Main Street / SR-115                               |                                           | X                                 |                                |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146            | X                                         |                                   | X                              |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove |                                           | X                                 |                                |
| 55    | Provo 800 / 820 North / 700 North                         |                                           | X                                 |                                |
| 57    | Springville 400 South / SR-77                             |                                           | X                                 |                                |
| 58    | University Ave / US-189 - Provo                           |                                           | X                                 |                                |
| 59    | US-6 - Santaquin to Elberta                               |                                           | X                                 | X                              |
| 62    | SR-198 - Payson to Santaquin                              |                                           |                                   | X                              |
| 63    | Orem 800 North / SR-52                                    | X                                         |                                   | X                              |
| 64    | Orem 800 North / SR-52                                    |                                           | X                                 |                                |
| 65    | University Ave - Provo                                    |                                           |                                   | X                              |
| 66    | Elk Ridge Drive - Salem                                   |                                           | X                                 |                                |
| 68    | Meadows Connection Road                                   |                                           | X                                 |                                |
| 70    | Orem Center Street                                        |                                           | X                                 |                                |
| 71    | Pleasant Grove Blvd                                       |                                           | X                                 |                                |
| 72    | Provo Center Street / SR-114 - Provo                      |                                           | X                                 |                                |
| 75    | Springville 1400 North / SR-75                            |                                           | X                                 |                                |
| 79    | Lehi Main Street / SR-73                                  |                                           | X                                 |                                |
| 80    | Orem 1600 North   800 East                                |                                           |                                   | X                              |
| 84    | Ranches Parkway - Eagle Mountain                          |                                           |                                   |                                |
| 85    | Springville 1600 South / Spanish Fork 2700 North          |                                           | X                                 |                                |
| 86    | UC 12400 South                                            |                                           |                                   | X                              |
| 87    | Woodland Hills Drive - Salem                              | X                                         |                                   | X                              |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road  |                                           | X                                 |                                |
| T2    | Commuter Rail - Provo to Payson                           | X                                         | X                                 |                                |
| T5    | Light Rail - Draper to Orem                               |                                           | X                                 | X                              |

### CONCLUSION

- One of the primary concerns that should be addressed when planning a facility in an area prone to geologic hazards is to ensure that there are alternative routes providing similar access.
- Alternative rights-of-way in less unstable areas should be considered.
- Engineering and design should include mitigation for such conditions.
- Funding of projects should include sufficient funds for mitigation measures.



### EPA STUDY SITES

The potential for hazardous waste in project rights-of-way is a concern in the setting of transportation facilities, because the purchase of a contaminated site or the purchase of property split from a contaminated parcel may result in the public agency becoming financially liable for hazardous waste clean-up. This liability, if it falls to the transportation agency, could create significant financial burdens and project delays.

To identify projects that could conflict with hazardous waste sites, Mountainland staff compared the location of MTP projects with the location of hazardous waste sites listed in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) and Leaking Underground Storage Tanks (LUST).

CERCLIS is the database used by the EPA to track superfund progress at potential and confirmed hazardous waste sites. Inclusion CERCLIS simply means EPA has been notified of

the possibility of some release of hazardous substance to the environment, there by triggering the need for a preliminary assessment

Underground Storage Tanks (UST) are regulated and monitored by the EPA. The EPA has provided a Trust Fund to clean up Leaking Underground Storage Tanks. The Trust Fund provides money for overseeing and enforcing corrective action taken by a responsible party, who is the owner or operator of the leaking UST. The Trust Fund also provides money for cleanups at UST sites where the owner or operator is unknown, unwilling, or unable to respond, or which require emergency action.

The “EPA Study Sites Map” illustrates the current inventory of EPA CERCLIS and LUST sites within the MPO area. The potentially impacted projects are listed on the Possible EPA Site Impact table through a GIS analysis of 50’ buffer of the site to the ROW of any project.

### POSSIBLE EPA SITES

| MTP # | NAME                                                 | LEAKING<br>UNDERGROUND<br>STORAGE TANKS | EPA CERCLIS |
|-------|------------------------------------------------------|-----------------------------------------|-------------|
| 25    | Pioneer Crossing / Vineyard Expressway               |                                         | X           |
| 45    | State Street/US-89 - Pleasant Grove to American Fork | X                                       |             |

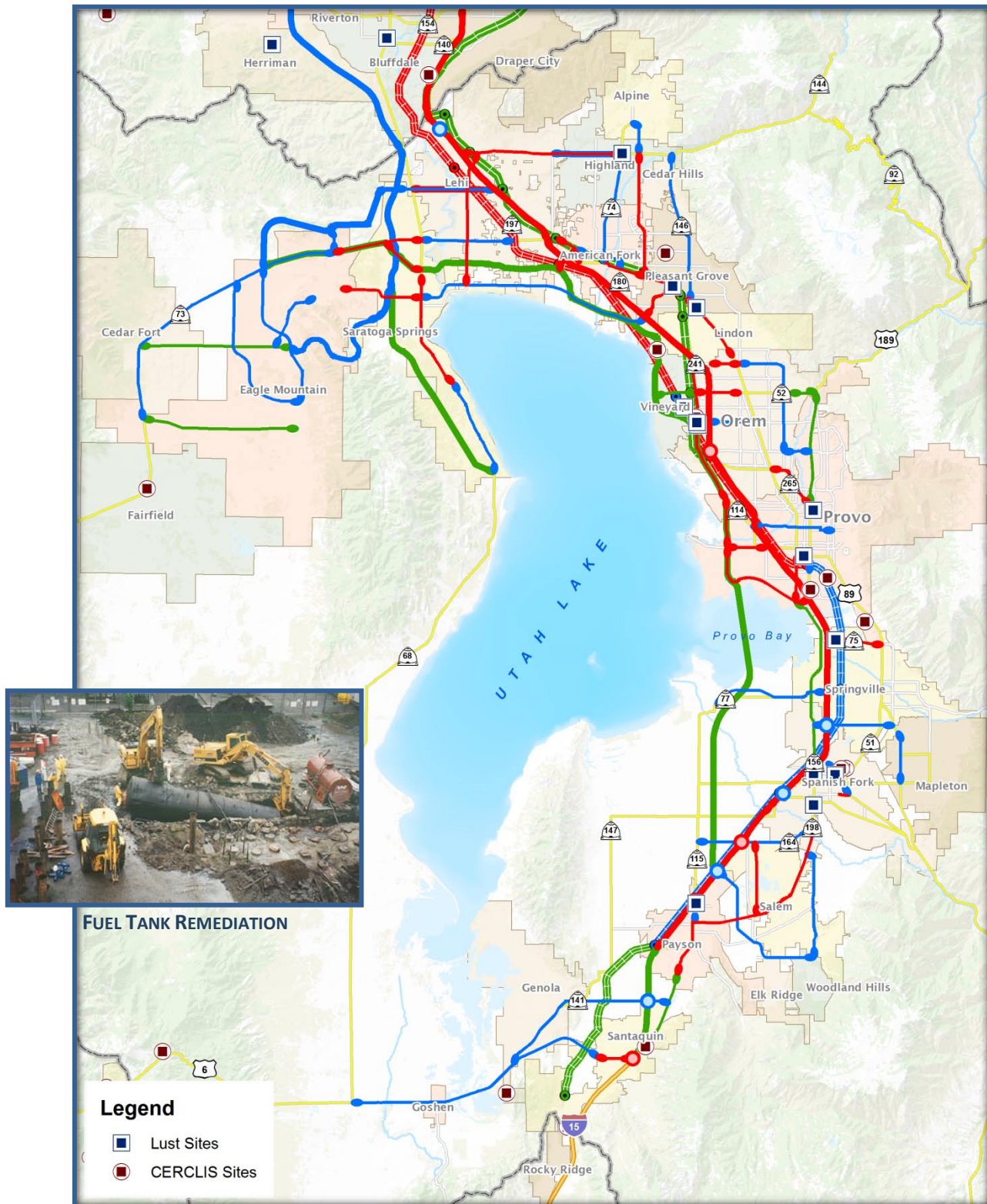
### CONCLUSION

- The presence of an EPA site may significantly increase the cost of any project. Clean up and mitigation cost should be included during the project’s cost estimating.
- While increasing project costs a transportation project can be the catalyst for removing a negative

environmental condition and spur further clean up and reclaiming of land for development. Appropriate land uses and community participation in reclaiming a site should be sought in the early planning process thru completion.



## POSSIBLE EPA SITES MAP





## BODIES OF WATER AND FLOODPLAIN MODIFICATION

Floodplains and water bodies help to accommodate flooding and moderate erosion in a water way. Highway projects can impact a water body in many ways including: disturbing ground within 20 feet of natural or semi-natural rivers and streams, realigning or channeling meandering rivers and streams, placing obstructions in floodplains and realigning or channeling meandering rivers and streams, and constructing in unstable floodplain crossings.

Specific impact assessments and mitigation measures will be made during the environmental evaluation and review phase of the project development process. The following projects are identified as crossing creeks and rivers, areas with surface waters or floodplains as inventoried by the Federal Emergency Management Agency.



**PROVO RIVER  
50-YEAR FLOOD EVENT**

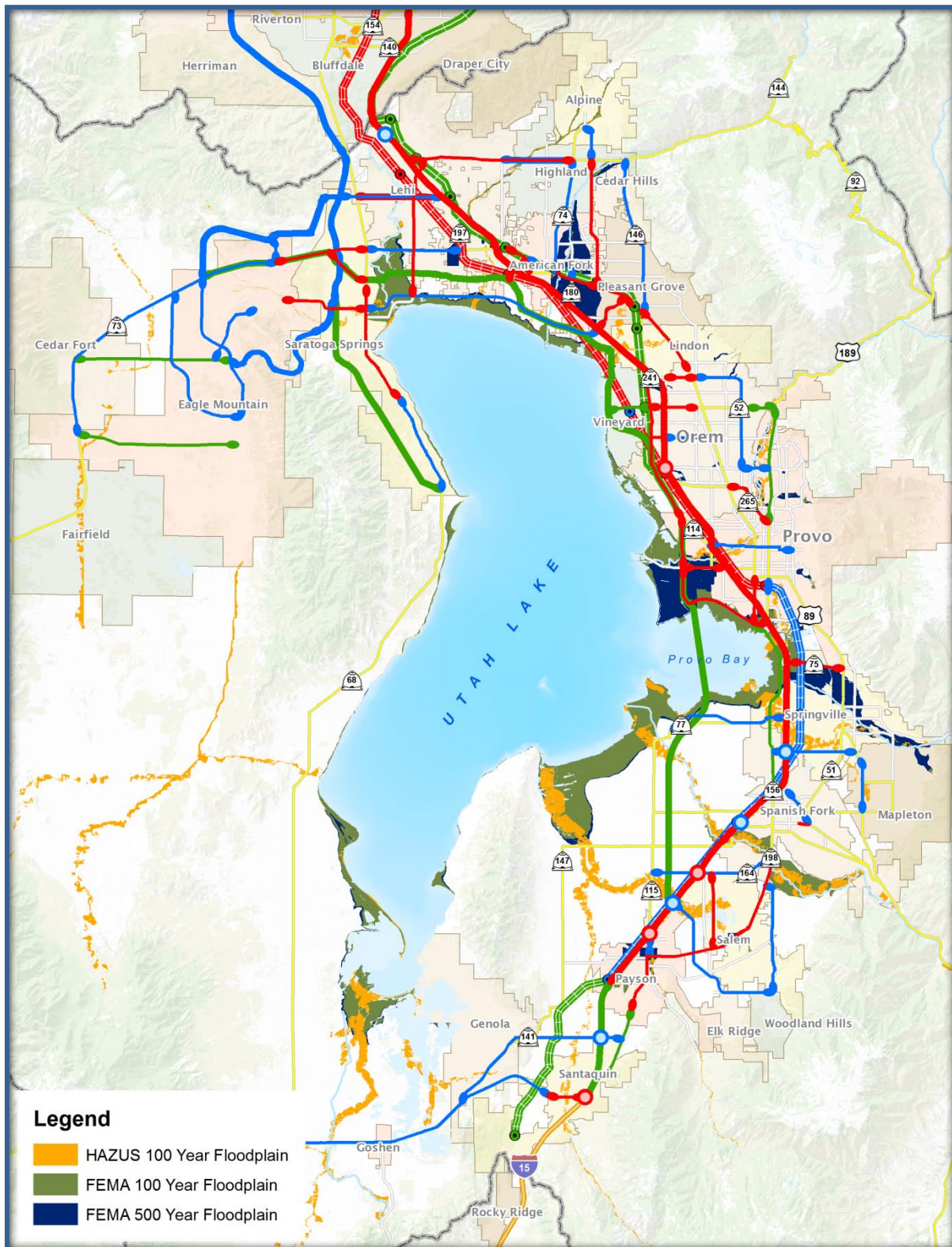
The following is an area calculation of Project ROW intersecting with any body of water and flood zones.

## BODIES OF WATER AND FLOODPLAIN PROJECTS

| MTP # | NAME                                                      | 100 YEAR FLOOD ZONE | 500 YEAR FLOOD ZONE | BODIES OF WATER |
|-------|-----------------------------------------------------------|---------------------|---------------------|-----------------|
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi     | X                   |                     | X               |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills        |                     |                     | X               |
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland             | X                   |                     |                 |
| 23    | I-15 Freeway Widening - Payson to Santaquin               |                     |                     | X               |
| 25    | Pioneer Crossing / Vineyard Expressway                    | X                   | X                   | X               |
| 26    | South Wasatch Freeway - Payson to Provo                   | X                   | X                   | X               |
| 36    | SR-198 - Spanish Fork to Payson                           | X                   | X                   |                 |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain |                     |                     | X               |
| 41    | Provo 500 West                                            | X                   | X                   |                 |
| 42    | Redwood Road / SR-68 - Saratoga Springs                   | X                   |                     |                 |
| 44    | State Street / US-89 - Orem to Pleasant Grove             | X                   | X                   |                 |
| 45    | State Street / US-89 - Pleasant Grove to American Fork    |                     | X                   |                 |
| 47    | University Parkway / SR-265 - Orem to Provo               | X                   |                     | X               |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem      | X                   |                     |                 |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                      |                     |                     | X               |
| 51    | Payson Main Street / SR-115                               |                     | X                   |                 |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove | X                   | X                   | X               |
| 55    | Provo 800 / 820 North / 700 North                         | X                   |                     | X               |
| 57    | Springville 400 South / SR-77                             | X                   | X                   |                 |
| 59    | US-6 - Santaquin to Elberta                               |                     |                     | X               |



## BODIES OF WATER AND FLOODPLAIN MAP

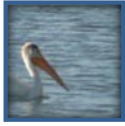




| MTP # | BODIES OF WATER AND FLOODPLAIN CONTINUED                 | 100 YEAR FLOOD ZONE | 500 YEAR FLOOD ZONE | BODIES OF WATER |
|-------|----------------------------------------------------------|---------------------|---------------------|-----------------|
| 62    | SR-198 - Payson to Santaquin                             |                     |                     | X               |
| 63    | Orem 800 North / SR-52                                   | X                   |                     | X               |
| 65    | University Ave - Provo                                   |                     | X                   |                 |
| 66    | Elk Ridge Drive - Salem                                  |                     |                     | X               |
| 69    | Orem 1600 North                                          |                     | X                   |                 |
| 72    | Provo Center Street / SR-114 - Provo                     |                     | X                   |                 |
| 75    | Springville 1400 North / SR-75                           | X                   | X                   | X               |
| 76    | American Fork 100 East   Alpine Highway / SR-74          |                     | X                   |                 |
| 79    | Lehi Main Street / SR-73                                 | X                   | X                   | X               |
| 80    | Orem 1600 North   800 East                               |                     | X                   |                 |
| 81    | Orem 800 South / Provo 3700 North                        | X                   | X                   | X               |
| 83    | Pacific Ave Bypass Road - American Fork                  |                     | X                   |                 |
| 85    | Springville 1600 South / Spanish Fork 2700 North         |                     |                     | X               |
| 87    | Woodland Hills Drive - Salem                             |                     |                     | X               |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | X                   | X                   | X               |
| T2    | Commuter Rail - Provo to Payson                          | X                   | X                   | X               |
| T3    | Commuter Rail - Payson to Santaquin                      |                     |                     | X               |
| T5    | Light Rail - Draper to Orem                              | X                   | X                   |                 |

**CONCLUSION**

- Special emphasis should be given during the public input phase of these projects to increase public awareness of this danger. Floodplains are not often recognized as a danger in this area as it is very arid and floods are few and far between. However their effects may be devastating.
- Alternate routes during flood times should be planned.
- Bridge construction should include break away (one side) and other flood construction considerations.
- Land uses near floodplains should be appropriate i.e. no hospitals or schools.
- Streams and rivers that are crossed should be crossed at ninety degree angles.
- Streams and rivers should not be channeled by a roadway. Sufficient space for a meander line should be included in the distance a facility is planned from a stream or river.



### WATER QUALITY IMPACTS

Utah State's Non-point Source Management Plan, the federal Clean Water Act and various other governmental regulations require the monitoring of water resource impacts and management in the MPO area. Water quality impacts associated with roadway project vary according to traffic volumes, pavement width additions and the recharge capability of the surrounding soils.

Vehicle miles traveled roughly indicate the amount of oil and other hazardous materials from cars that are deposited on the roadway and subsequently washed into the watershed with the next rainfall. The amount of pavement added to a roadway roughly correlates with increased salt usage in the winter and the elimination of permeable surfaces where precipitation is normally allowed to slowly filter into the area's aquifers. The recharge capabilities of the soils surrounding the project and the project's proximity to well recharge areas indicate the likelihood of the roadway runoff to contaminate drinking water.

Utah County has in the past used ground slag, a by-product of steel production, for road

sanding. This practice was recently stopped due to the negative air quality impacts associated with dust particulates.

Salt is rarely used in agricultural areas due to potential damage to fruit trees and crop productions. Currently sand, which is swept after each snow melt, is prevalently used throughout the area.

No projects have been identified that could impact water source in this plan.

### **CONCLUSION**

- Area recharge maps and other measures should be used during the environmental phase of the individual project development process.
- During project design, storm water removal facilities may be used to limit hazardous material seepage into ground water and retention ponds may be used to minimize the Introduction of silt and other particulates into streams and other water bodies.



### **WETLAND IMPACTS**

Wetlands serve critical environmental functions, including flood control, water purification and the provision of habitat for fish and wildlife. Wetlands can be defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated

soils conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.



**UTAH LAKE WETLANDS**

The significance of roadway wetland impacts varies based upon the projects characteristics, the size and quality of the wetlands area, and the level to which the wetlands have already been disturbed by people. A project may generally impact wetlands by destroying the immediate footprint of the planned facility or by providing a barrier between adjacent wetland areas. Listed in the Wetlands Impacts table are projects that may impact both wetlands from the National Wetlands Inventory (NM) and Essential Wetland as identified in the Utah Division of Wildlife Resources Central Region Wetlands Conservation Strategy. The NWI of the U.S. Fish & Wildlife Service produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. Federal, State, and local agencies, academic institutions, U.S. Congress, and the private sector use the National Wetlands Inventory Center information. The Utah

Division of Wildlife Resources identified eight essential wetlands areas in Utah County:

1. Utah Lake and associated wetland complexes (North Shore, Provo Bay, Skipper Bay, Goshen Bay, Benjamin Slough, etc.)
2. Powell Slough WMA ownership conflicts
3. Potential acquisitions within Utah Lake Wetland Preserve Boundary
4. Isolated wetland complexes and wet meadows along east bench area
5. Fairfield wetlands
6. Holladay Spring
7. American Fork Spring Complex (currently under construction for commercial development)
8. Riparian areas along UDWR Priority Streams

DWR Essential Wetland Areas were produced through a process of layering the following data: National Wetlands Inventory (NWI) maps and Gap Analysis Program (GAP) coverage of wetland-associated habitats as determined by the Utah DNR, species distribution/habitat relationships and Threatened & Endangered species status and property/real estate at-risk status determinations.

## **UTAH LAKE WETLAND PRESERVE, PART OF THE UTAH RECLAMATION MITIGATION AND CONSERVATION COMMISSION'S**

### ***CENTRAL UTAH (WATER) PROJECT***

Utah Lake, in Central Utah, is the largest naturally occurring freshwater lake in the western United States. Its wetlands have long



## IMPACTS AND BENEFITS

been recognized locally and nationally for their critical importance to fish and wildlife resources. The Utah Lake wetland ecosystem is important as a breeding area and stopover for many migratory birds in the Pacific Flyway. Approximately 226 species of birds are known to use Utah Lake wetlands, as well as 49 mammalian species, 16 species of amphibians and reptiles and 18 species of fish. Utah Lake also provides feeding areas for birds nesting on the Great Salt Lake.

The Utah Lake Wetland Preserve, a network of wetland and interspersed upland habitats near the southern end of Utah Lake, is being established to partially mitigate for past and anticipated future impacts of Central Utah Project water development. The Preserve will provide habitat for wetland- and upland-dependent species and will ultimately be

managed by the Utah Division of Wildlife Resources.

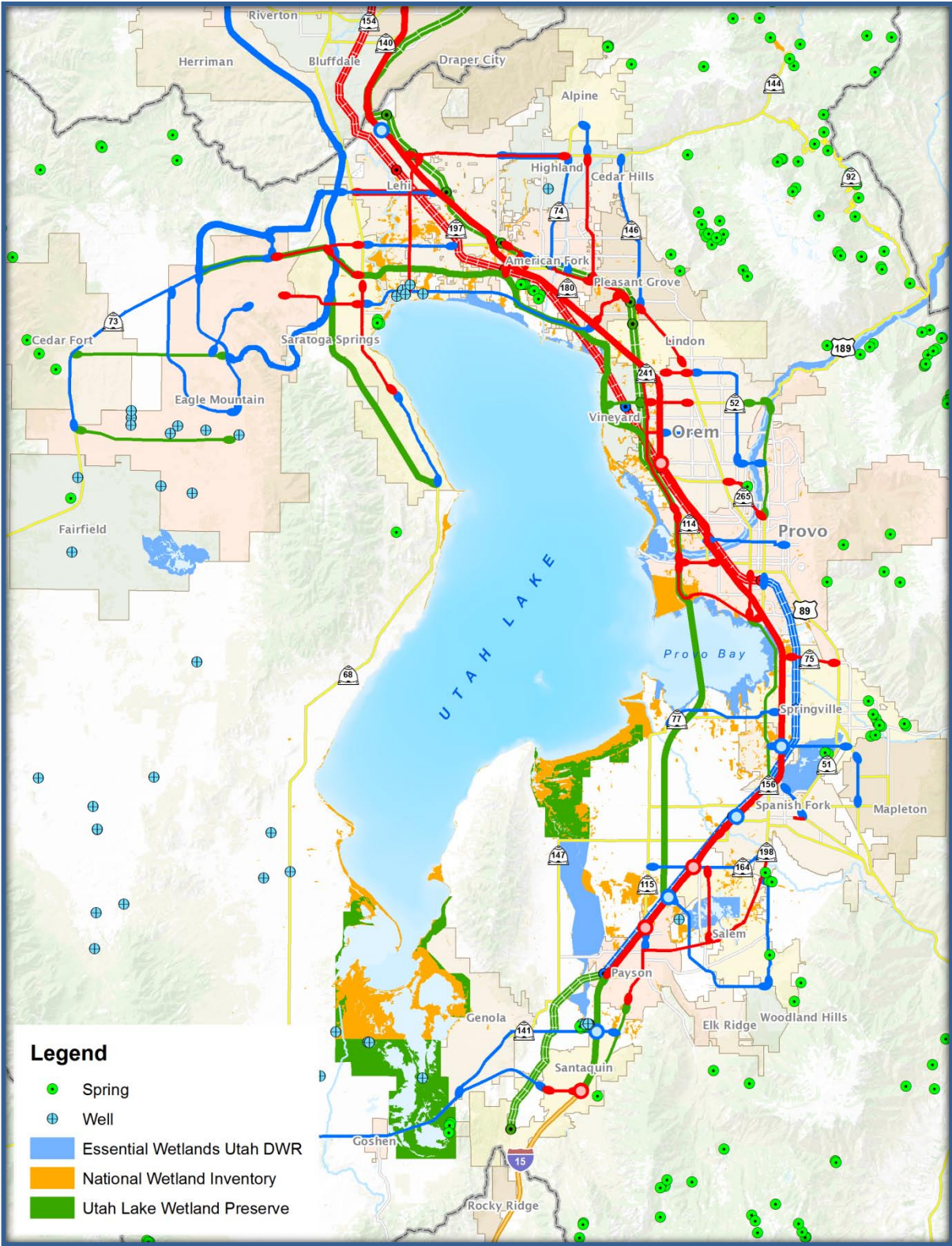
The Commission entered into an agreement in 1996 with The Nature Conservancy, Utah Division of Wildlife Resources, U.S. Department of the Interior, Bureau of Reclamation, Bureau of Land Management, and U.S. Fish and Wildlife Service for acquisition and management at the Utah Lake Wetland Preserve. The Preserve consists of two units: Goshen Bay and Benjamin Slough.

Special consideration should be given to avoidance, minimization or mitigation with the projects that intersect with this resource. Wetland delineation and jurisdictional wetland impact assessments and mitigation measures will be determined utilizing the following map and other measures during the environmental evaluation and review phase of the individual project development process.

### WETLAND IMPACTS PROJECTS

| MTP # | NAME                                                               | NATIONAL WETLAND INVENTORY | UTAH DEPARTMENT OF NATURAL RESOURCES/<br>DIVISION WILDLIFE ESSETAIL WETLANDS | UTAH LAKE WETLAND PRESERVE |
|-------|--------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------|----------------------------|
| 17    | Lake Mountain Freeway / Expressway - Saratoga Springs to Eagle Mtn | 0.2                        |                                                                              |                            |
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi              | 3.0                        |                                                                              |                            |
| 19    | Mountain View Freeway Salt Lake County to Saratoga Springs         | 0.2                        |                                                                              |                            |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills                 | 6.7                        | 7.9                                                                          |                            |
| 23    | I-15 Freeway Widening - Payson to Santaquin                        | 1.8                        |                                                                              |                            |
| 25    | Pioneer Crossing / Vineyard Expressway                             | 31.9                       |                                                                              |                            |
| 26    | South Wasatch Freeway - Payson to Provo                            | 152.4                      | 19.8                                                                         |                            |
| 36    | SR-198 - Spanish Fork to Payson                                    | 0.8                        | 0.8                                                                          |                            |
| 41    | Provo 500 West                                                     | 0.03                       |                                                                              |                            |
| 45    | State Street / US-89 - Pleasant Grove to American Fork             | 1.8                        |                                                                              |                            |
| 46    | State Street / US-89 - American Fork to Lehi                       | 0.2                        |                                                                              |                            |
| 47    | University Parkway / SR-265 - Orem to Provo                        | 0.2                        | 5.0                                                                          |                            |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove          | 12.6                       | 0.7                                                                          |                            |
| 55    | Provo 800 / 820 North / 700 North                                  | 0.02                       | 5.3                                                                          |                            |
| 56    | Redwood Road / SR-68 - Saratoga Springs                            |                            |                                                                              |                            |
| 57    | Springville 400 South / SR-77                                      | 5.0                        | 4.2                                                                          |                            |

## WETLAND IMPACTS MAP



| MTP # | WETLAND IMPACTS CONTINUED NAME                           | NATIONAL WETLAND INVENTORY | UTAH DEPARTMENT OF NATURAL RESOURCES/<br>DIVISION WILDLIFE<br>ESSETAIL WETLANDS | UTAH LAKE WETLAND PRESERVE |
|-------|----------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------|----------------------------|
| 59    | US-6 - Santaquin to Elberta                              |                            |                                                                                 | 25.2                       |
| 63    | Orem 800 North / SR-52                                   | 0.02                       | 2.3                                                                             |                            |
| 64    | Orem 800 North / SR-52                                   | 6.9                        |                                                                                 |                            |
| 65    | University Ave - Provo                                   | 0.3                        | 8.0                                                                             |                            |
| 66    | Elk Ridge Drive - Salem                                  | 4.4                        | 8.2                                                                             |                            |
| 68    | Meadows Connection Road                                  | 3.2                        |                                                                                 |                            |
| 71    | Pleasant Grove Blvd                                      | 0.1                        |                                                                                 |                            |
| 72    | Provo Center Street / SR-114 - Provo                     | 0.01                       |                                                                                 |                            |
| 75    | Springville 1400 North / SR-75                           | 0.4                        |                                                                                 |                            |
| 79    | Lehi Main Street / SR-73                                 | 1.3                        |                                                                                 |                            |
| 81    | Orem 800 South / Provo 3700 North                        |                            | 2.7                                                                             |                            |
| 85    | Springville 1600 South / Spanish Fork 2700 North         | 1.26                       | 13.7                                                                            |                            |
| 86    | UC 12400 South                                           | 0.5                        |                                                                                 |                            |
| 87    | Woodland Hills Drive - Salem                             | 0.4                        |                                                                                 |                            |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road | 40.4                       | 26.1                                                                            |                            |
| T2    | Commuter Rail - Provo to Payson                          | 2.3                        |                                                                                 |                            |
| T3    | Commuter Rail - Payson to Santaquin                      |                            |                                                                                 |                            |
| T5    | Light Rail - Draper to Orem                              | 2.1                        |                                                                                 |                            |

## CONCLUSION

- Sufficient funds should be included in all requests to provide mitigation for wetlands.
- Wetland areas should be avoided, if at all possible, and rights-of-way need not be straight, curves around wetlands may work well.
- No development of land in wetland areas should be allowed.
- Banking wetlands can help with future mitigation efforts.
- Using no access lines to restrict accompanying land development.



UTAH LAKE WETLAND PRESERVE  
GOSHEN BAY



## SECTION 4(F)

Section 4(f) of the Department of Transportation Act of 1966, stipulated that the Federal Highway Administration and other Department of Transportation agencies cannot approve the use of land from a significant publicly owned public park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.

Since the enactment (Federal law) of Section 4(F) of the Department of Transportation Act of 1966, court interpretations and many years of project-by-project applications, FHWA has developed numerous policy positions on various aspects of the Section 4(F) requirements. Section 4(F) applies to all historic sites, but only to publicly owned parks, recreational areas, and wildlife and waterfowl refuges.



### SECTION 4(F) HISTORIC

A cultural resource must meet the following criteria, must be of national, state or local significance. If it is not on or eligible for listing on the National Register of Historic Places (NRHP), its protection must be considered appropriate by the Federal Highway Administration. Unlike the other two basic Section 4(F) resource categories parks and recreation areas, and refuges, cultural resources do not require public ownership in order to qualify for protection under Section 4(F).

Transit and roadway projects can negatively impact cultural resources by creating noise, vibration, the need to relocate, vandalism,

physical impacts, and others. Positive impacts may also result by providing improved access to important community cultural resources.

For this analysis the State Historic Preservation Office felt that considering individual prehistoric, or known archaeological sites, would not be appropriate without an in-depth study of each of the project areas during pre-construction. Road and transit projects ROW were analyzed within 50' of sites listed on the National and State Historic Registers as provided by the Utah Department of History. Cemeteries sites (a cultural resource) were provided by the Utah County Public works Department and accounted for if a project ROW intersects with cemetery parcel.



**PROVO TABERNACLE DEDICATED 1867**

Impacts to all cultural resources will be identified and mitigation measures determined during the environmental phase of project development. If unknown cultural resources are encountered during the project development/construction phase, appropriate investigation should take place. Reasonable efforts should be made to provide access and information to the site during construction. Such mitigation might, for example, include the placement of historical information markers, in addition to providing the standard documentation.

### SECTION 4(F) HISTORIC PROJECTS

| MTP # | NAME                                                   | NUMBER OF POSSIBLE HISTORIC SITES | CEMETERIES |
|-------|--------------------------------------------------------|-----------------------------------|------------|
| 21    | Timpanogos Highway / SR-92 - Lehi to Highland          |                                   | 1          |
| 25    | Pioneer Crossing / Vineyard Expressway                 | 38                                |            |
| 26    | South Wasatch Freeway - Payson to Provo                | 4                                 |            |
| 36    | SR-198 - Spanish Fork to Payson                        | 36                                |            |
| 38    | Orem 800 North / SR-52                                 | 3                                 |            |
| 41    | Provo 500 West                                         | 13                                |            |
| 43    | Santaquin Main Street / US-6                           | 1                                 |            |
| 44    | State Street / US-89 - Orem to Pleasant Grove          | 39                                |            |
| 45    | State Street / US-89 - Pleasant Grove to American Fork | 25                                |            |
| 46    | State Street / US-89 - American Fork to Lehi           | 4                                 |            |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem   | 1                                 |            |
| 51    | Payson Main Street / SR-115                            | 38                                |            |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146         | 42                                | 1          |
| 55    | Provo 800 / 820 North / 700 North                      | 7                                 |            |
| 58    | University Ave / US-189 - Provo                        | 5                                 |            |
| 59    | US-6 - Santaquin to Elberta                            | 2                                 |            |
| 60    | US-89 - Mapleton                                       | 9                                 |            |
| 62    | SR-198 - Payson to Santaquin                           | 3                                 |            |
| 63    | Orem 800 North / SR-52                                 | 2                                 |            |
| 68    | Meadows Connection Road                                | 2                                 |            |
| 69    | Orem 1600 North                                        | 11                                |            |
| 72    | Provo Center Street / SR-114 - Provo                   | 25                                |            |
| 76    | American Fork 100 East   Alpine Highway / SR-74        | 25                                | 1          |
| 79    | Lehi Main Street / SR-73                               | 6                                 |            |
| 80    | Orem 1600 North   800 East                             | 32                                |            |
| 81    | Orem 800 South / Provo 3700 North                      | 4                                 |            |
| 82    | Orem Center Street                                     | 1                                 |            |
| 83    | Pacific Ave Bypass Road - American Fork                | 75                                |            |
| 86    | UC 12400 South                                         | 5                                 |            |
| 87    | Woodland Hills Drive - Salem                           | 3                                 |            |
| T5    | Light Rail - Draper to Orem                            | 40                                |            |

### CONCLUSION

- Appropriate access should be provided to Cultural and Historic sites.
- When possible Cultural and Historic sites should be preserved. The preferred alignment and right-of-way should be located a suitable distance from the site.
- While good vehicular access is needed to cultural and historic sites. Extremely large vehicular facilities can isolate cultural and historic sites from the community, especially from pedestrian

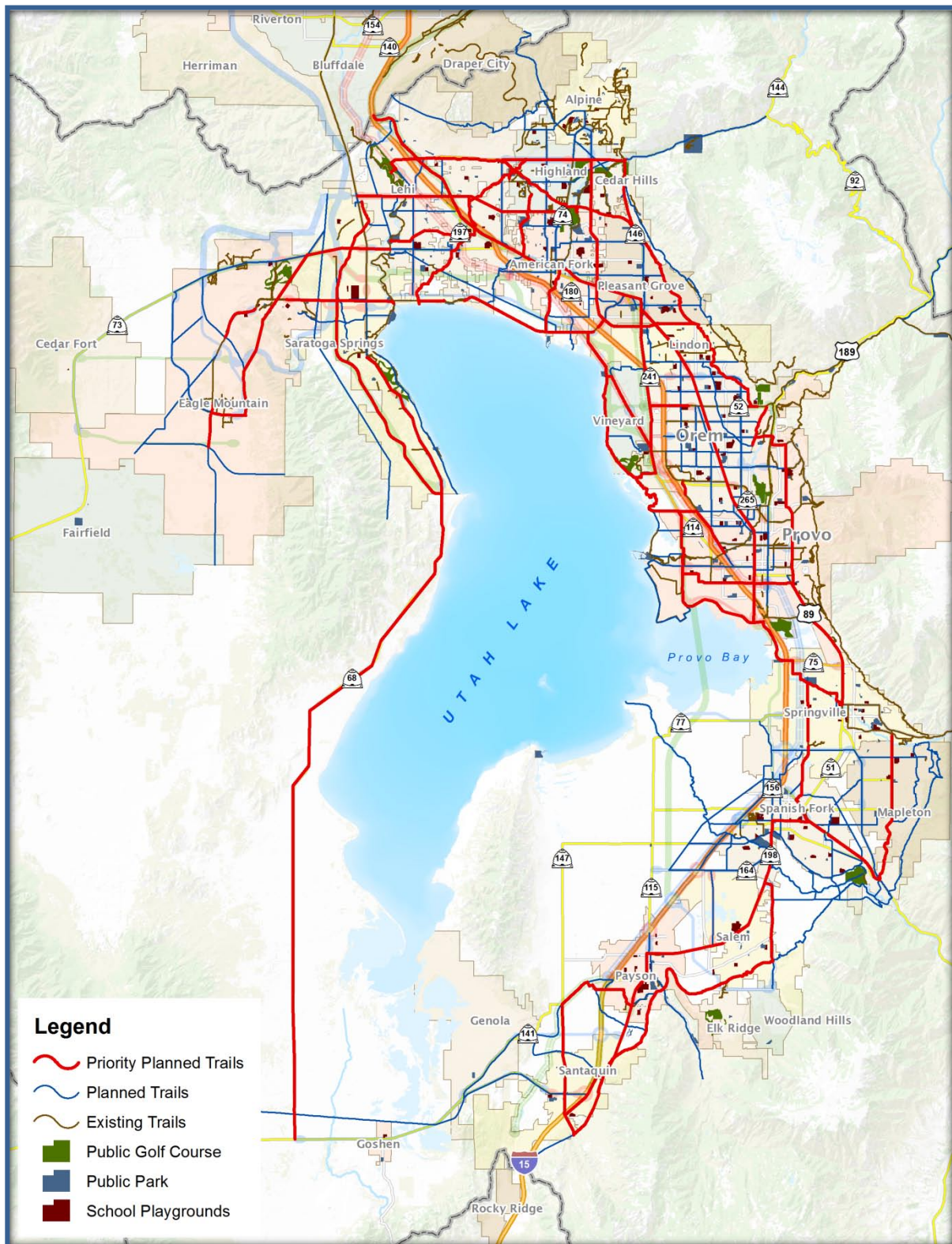
and cyclists. Alternative routes should be provided along with any vehicular improvements to ensure complete access.

HISTORIC MANSION  
IN PROVO CITY



## IMPACTS AND BENEFITS

### PUBLIC PARKS / RECREATION AREAS / PLANNED TRAILS MAP







## SECTION 4(F) PUBLIC PARKS / RECREATION AREAS

Public parks and recreation areas are among the three basic types of resources protected by Section 4(F). In order to qualify as a park or recreation area under the statute, a resource must meet the following criteria: It must be publicly owned, it must be open to the public, its major purpose must be for park or recreation activities, and it must be significant as a park or recreation area. The following table lists the Road and Transit projects that intersect with: public parks, public recreation areas, public multiple-use land holdings, historic state parks, fairgrounds, school playgrounds, public golf courses, existing public non-motorized trails and future public trails of regional significance.

All existing and proposed trail facilities are or will be publicly owned; 4(F) facilities. Because trails make important non-motorized connections between major origins and destinations, it is essential that they exist as contiguous facilities. Highway and other transportation projects can adversely affect trails by interrupting existing or planned routes. Each of these projects should therefore provide for the continuity of both existing and planned trails with the incorporation of underpasses/overpasses or other appropriate connections. The following table illustrates planned transportation projects in relationship to these publicly own or public interest properties.

### PUBLIC PARKS / RECREATION AREAS / PLANNED TRAILS

| MTP # | NAME                                                                | PUBLIC PARKS | PUBLIC GOLF COURSES | SCHOOL PLAYGROUNDS | EXISTING TRAILS | MTP TRAILS |
|-------|---------------------------------------------------------------------|--------------|---------------------|--------------------|-----------------|------------|
| 10    | Hidden Valley Expressway / Freeway                                  |              |                     |                    |                 | X          |
| 16    | Lake Mountain Expressway - Eagle Mtn                                |              |                     |                    | X               | X          |
| 17    | Lake Mountain Freeway / Expressway<br>Saratoga Springs to Eagle Mtn |              |                     |                    |                 | X          |
| 18    | Lehi 2100 North Expressway - Saratoga<br>Springs to Lehi            | 1            |                     |                    | X               | X          |
| 19    | Mountain View Freeway Salt Lake County<br>to Saratoga Springs       |              |                     |                    |                 | X          |
| 20    | Nebo Beltway Expressway - Payson to<br>Woodland Hills               |              |                     |                    | X               | X          |
| 21    | Timpanogos Highway/SR-92 - Lehi to<br>Highland                      |              |                     |                    | X               | X          |
| 22    | US-6 - Spanish Fork                                                 | 1            |                     |                    |                 | X          |

**TALON COVE GOLF COURSE  
SARATOGA SPRINGS**



## IMPACTS AND BENEFITS

| MTP # | PUBLIC PARKS / RECREATION AREAS / PLANNED TRAILS CONTINUED | PUBLIC PARKS | PUBLIC GOLF COURSES | SCHOOL PLAYGROUNDS | EXISTING TRAILS | MTP TRAILS |
|-------|------------------------------------------------------------|--------------|---------------------|--------------------|-----------------|------------|
| 23    | I-15 Freeway Widening - Payson to Santaquin                | 1            |                     |                    |                 | X          |
| 24    | Mountain View Freeway (Foothill) - Saratoga Springs        |              |                     |                    |                 | X          |
| 25    | Pioneer Crossing / Vineyard Expressway                     | 1            |                     | 1                  | X               | X          |
| 26    | South Wasatch Freeway - Payson to Provo                    |              |                     |                    | X               | X          |
| 35    | SR-73 - Saratoga Springs to Eagle Mountain                 |              |                     |                    | X               | X          |
| 36    | SR-198 - Spanish Fork to Payson                            | 2            |                     | 1                  | X               | X          |
| 38    | Orem 800 North / SR-52                                     |              |                     |                    |                 | X          |
| 39    | Pioneer Crossing Extension - Saratoga Springs              |              |                     |                    | X               | X          |
| 40    | Pony Express Parkway - Saratoga Springs to Eagle Mountain  | 1            |                     |                    | X               | X          |
| 41    | Provo 500 West                                             |              |                     |                    | X               | X          |
| 42    | Redwood Road / SR-68 - Saratoga Springs                    |              | 1                   |                    | X               | X          |
| 43    | Santaquin Main Street / US-6                               |              |                     |                    |                 | X          |
| 44    | State Street / US-89 - Orem to Pleasant Grove              |              |                     |                    | X               | X          |
| 45    | State Street / US-89 - Pleasant Grove to American Fork     | 1            |                     |                    |                 | X          |
| 46    | State Street / US-89 - American Fork to Lehi               |              |                     |                    |                 | X          |
| 47    | University Parkway / SR-265 - Orem to Provo                | 2            |                     | 1                  | X               | X          |
| 49    | Arrowhead Trail / 8000 South - Spanish Fork to Salem       |              |                     |                    |                 | X          |
| 50    | SR-73 - Eagle Mountain to Cedar Fort                       |              |                     |                    |                 | X          |
| 51    | Payson Main Street / SR-115                                |              |                     |                    |                 | X          |
| 52    | Pleasant Grove 100 East / Canyon Road / SR-146             | 3            | 1                   |                    | X               | X          |
| 53    | Pony Express Parkway - Eagle Mountain                      |              |                     |                    | X               | X          |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove  | 1            |                     |                    | X               | X          |
| 55    | Provo 800 / 820 North / 700 North                          |              |                     |                    | X               | X          |
| 56    | Redwood Road / SR-68 - Saratoga Springs                    |              |                     |                    | X               | X          |
| 57    | Springville 400 South / SR-77                              |              |                     |                    |                 |            |
| 58    | University Ave / US-189 - Provo                            |              |                     |                    |                 | X          |
| 59    | US-6 - Santaquin to Elberta                                |              |                     |                    |                 | X          |
| 60    | US-89 - Mapleton                                           |              |                     |                    |                 | X          |
| 61    | SR-73 - Saratoga Springs to Eagle Mountain                 |              |                     |                    | X               | X          |
| 62    | SR-198 - Payson to Santaquin                               |              |                     |                    |                 | X          |
| 63    | Orem 800 North / SR-52                                     |              |                     |                    | X               | X          |
| 64    | Orem 800 North / SR-52                                     |              |                     |                    |                 | X          |
| 65    | University Ave - Provo                                     |              | 1                   |                    | X               | X          |

## IMPACTS AND BENEFITS

| MTP # | PUBLIC PARKS / RECREATION AREAS / PLANNED TRAILS CONTINUED | PUBLIC PARKS | PUBLIC GOLF COURSES | SCHOOL PLAYGROUNDS | EXISTING TRAILS | MTP TRAILS |
|-------|------------------------------------------------------------|--------------|---------------------|--------------------|-----------------|------------|
| 66    | Elk Ridge Drive - Salem                                    |              |                     |                    |                 | X          |
| 68    | Meadows Connection Road                                    |              |                     |                    |                 | X          |
| 69    | Orem 1600 North                                            | 1            |                     |                    | X               | X          |
| 70    | Orem Center Street                                         |              |                     |                    |                 | X          |
| 71    | Pleasant Grove Blvd                                        |              |                     |                    | X               | X          |
| 72    | Provo Center Street / SR-114 - Provo                       |              |                     |                    | X               | X          |
| 74    | Spanish Fork Center Street                                 |              |                     | 1                  |                 | X          |
| 75    | Springville 1400 North / SR-75                             |              |                     |                    |                 | X          |
| 76    | American Fork 100 East   Alpine Highway/ SR-74             | 2            |                     |                    | X               | X          |
| 77    | Canyon Crest Drive - Highland to Alpine                    | 1            |                     |                    | X               | X          |
| 78    | Eagle Mountain Blvd                                        | 1            |                     |                    | X               | X          |
| 79    | Lehi Main Street / SR-73                                   | 3            |                     |                    | X               | X          |
| 80    | Orem 1600 North   800 East                                 | 1            |                     | 2                  | X               | X          |
| 81    | Orem 800 South / Provo 3700 North                          |              |                     |                    | X               | X          |
| 82    | Orem Center Street                                         |              |                     | 1                  |                 | X          |
| 83    | Pacific Ave Bypass Road - American Fork                    |              |                     |                    |                 | X          |
| 84    | Ranches Parkway - Eagle Mountain                           |              |                     |                    |                 | X          |
| 85    | Springville 1600 South / Spanish Fork 2700 North           |              |                     |                    |                 | X          |
| 86    | UC 12400 South                                             |              |                     |                    |                 | X          |
| 87    | Woodland Hills Drive - Salem                               |              |                     |                    |                 | X          |
| 88    | Eagle Mountain 3400 North                                  |              |                     |                    |                 | X          |
| 89    | Eagle Mountain 5600 North                                  |              |                     |                    | X               | X          |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road   | 1            |                     |                    |                 | X          |
| T2    | Commuter Rail - Provo to Payson                            |              |                     |                    | X               | X          |
| T3    | Commuter Rail - Payson to Santaquin                        |              |                     |                    |                 | X          |
| T5    | Light Rail - Draper to Orem                                | 3            |                     | 2                  | X               | X          |



**AMERICAN FORK SKATE PARK**

In addition, the mountains east of the MPO area provide recreation and open space for the people of Utah County. The Uinta National Forest is a nationally recognized winter and summer recreation area for skiers and hikers; it contains three congressionally designated wilderness areas of inspiring grandeur and is a source of water for the cities of the area. The MTP will need to minimize the impacts on these publicly owned recreational areas of significant value.





## SECTION 6(F) PROPERTIES

Section 6(F) properties: land and water conservation funded properties acquired or developed under the federal land and water conservation fund program must be retained in public ownership for outdoor recreation use in perpetuity. These were accounted by measuring ROW of projects intersecting with these parcels.

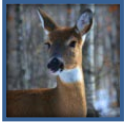
## SECTION 6(F) PROPERTIES

| MTP # | NAME                                       | ACRES OF 6(F) PROPERTY |
|-------|--------------------------------------------|------------------------|
| 37    | North County Blvd (UC 4800 West)           | 0.02                   |
| 52    | Pleasant Grove 100 East/Canyon Road SR-146 | 0.18                   |
| 69    | Orem 1600 North                            | 0.09                   |
| 81    | Orem 800 South/Provo 3700 North            | 0.03                   |

## SECTION 6(F) PROPERTIES MAP



UTAH LAKE STATE PARK



### SECTION 4(F) WILDLIFE/WATERFOWL REFUGES

Wildlife Refuges are among the three basic types of resources protected by Section 4(f). In order to qualify as a refuge under the statute, a resource must meet the following criteria: It must be publicly owned, its major purpose must be that of a refuge, and it must be significant as a refuge.

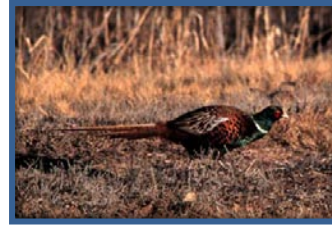
The entire MPO area has been identified as important migratory waterfowl habitat described as the “Intermountain West Unit,” by the U.S. Department of Interior in the 1994, update to the North American Waterfowl Management Plan. This plan's primary objective is to preserve habitat and increase duck, goose, and swan populations nationwide. Road and transit improvements should avoid or minimize any wetland or waterfowl habitat. In addition, sections of important farmland should be preserved to act as migratory rest and feeding areas.

The Utah Division of Wildlife Resources (UDWR) has also mapped the entire MPO area for Fish, Birds, and Mammal important habitat. Primary areas of concern with this mapped habitat are the bench or foothill locations, riparian or wetlands and water bodies. Foothills occur where the urbanized area meets the



**SAGE GROUSE**

Uinta National Forest in the eastern edge of the MPO area. These sagebrush and scrub oak covered hills provide critical habitat for the mule deer, elk, mink, snowshoe hare, rocky mountain big horn sheep, both for winter range as well as year round habitat. Several species of birds use the foothill area for yearlong habitat, such as California Quail, Sage Grouse, Ring Neck



**RING NECK PHEASANT**

valley locations that intersects with most road and transit projects.

UDWR Essential Wetland Areas are also important habitat for migratory birds and other water fowl. Tables of these themes intersecting with road and transit projects are listed in the wetlands analysis presented previously in this chapter.

Important fisheries in the MPO area are the upper portion of the Spanish Fork River, the entire stretch of the Provo and Jordan Rivers, portions of Hobbie Creek near Springville, portions of the American Fork River, and Utah Lake. Selected species include the June Sucker,



**THE JUNE SUCKER**

and aquatic habitat impacts road and transit projects that intersected major naturally occurring rivers, streams and water bodies are listed in the table.

Pheasant, Ruffed Grouse, including brooding habitat. California Quail, Ring Neck Pheasant also have critical habitat in the

Utah Chud and the Bonneville Cutthroat Trout. To portray fishery



**THE UTAH STATE FISH  
BONNEVILLE CUTTHROAT TROUT**

**WILDLIFE/WATERFOWL/FISHERY IMPACTS**

| MTP # | NAME                                                      | STATE WILDLIFE AREAS / CONSERVATION EASEMENT | UTAH DEPARTMENT OF NATURAL RESOURCES / DIVISION WILDLIFE ESSENTIAL WETLAND | POSSIBLE FISHERY / AQUATIC HABITAT |
|-------|-----------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------|------------------------------------|
| 18    | Lehi 2100 North Expressway - Saratoga Springs to Lehi     |                                              |                                                                            | X                                  |
| 20    | Nebo Beltway Expressway - Payson to Woodland Hills        |                                              | X                                                                          |                                    |
| 25    | Pioneer Crossing / Vineyard Expressway                    |                                              |                                                                            | X                                  |
| 26    | South Wasatch Freeway - Payson to Provo                   |                                              | X                                                                          | X                                  |
| 36    | SR-198 - Spanish Fork to Payson                           |                                              | X                                                                          |                                    |
| 47    | University Parkway / SR-265 - Orem to Provo               |                                              | X                                                                          | X                                  |
| 54    | Pony Express Parkway - Saratoga Springs to Pleasant Grove |                                              | X                                                                          | X                                  |
| 55    | Provo 800 / 820 North / 700 North                         |                                              | X                                                                          | X                                  |
| 57    | Springville 400 South / SR-77                             |                                              | X                                                                          |                                    |
| 63    | Orem 800 North / SR-52                                    |                                              | X                                                                          | X                                  |
| 65    | University Ave - Provo                                    |                                              | X                                                                          |                                    |
| 66    | Elk Ridge Drive - Salem                                   |                                              | X                                                                          |                                    |
| 79    | Lehi Main Street / SR-73                                  |                                              |                                                                            | X                                  |
| 81    | Orem 800 South / Provo 3700 North                         |                                              | X                                                                          | X                                  |
| 83    | Pacific Ave Bypass Road - American Fork                   |                                              |                                                                            | X                                  |
| 85    | Springville 1600 South / Spanish Fork 2700 North          |                                              | X                                                                          |                                    |
| 90    | Spanish Fork Main Street / Provo 500 West Connector Road  |                                              | X                                                                          | X                                  |
| T2    | Commuter Rail - Provo to Payson                           |                                              |                                                                            | X                                  |
| T3    | Commuter Rail - Payson to Santaquin                       |                                              | X                                                                          |                                    |

Several threatened and endanger species, both flora and fauna, exist within the MPO area. Coordination with the U.S. Fish and Wild Life Service, February 2011, determined the presence of the following threatened and/or endangered species in Utah County.



**PEREGRINE  
FALCON**

| Group  | Name                                                             | Status     | Lead Office                                      |
|--------|------------------------------------------------------------------|------------|--------------------------------------------------|
| Birds  | Arctic peregrine Falcon ( <i>Falco peregrinus tundrius</i> )     | Recovery   | Fairbanks Fish And Wildlife Field Office         |
| Birds  | Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )              | Candidate  | Sacramento Fish And Wildlife Office              |
| Birds  | Greater sage-grouse ( <i>Centrocercus urophasianus</i> )         | Candidate  | Wyoming Ecological Services Field Office         |
| Fishes | Humpback chub ( <i>Gila cypha</i> )                              | Endangered | Upper Co. River Endangered Fish Recovery Program |
| Fishes | Colorado pikeminnow (=squawfish) ( <i>Ptychocheilus lucius</i> ) | Endangered | Upper Co. River Endangered Fish Recovery Program |
| Fishes | Bonytail chub ( <i>Gila elegans</i> )                            | Endangered | Upper Co. River Endangered Fish Recovery Program |
| Fishes | Least chub ( <i>Lotichthys phlegethontis</i> )                   | Candidate  | Utah Ecological Services Field Office            |
| Fishes | June sucker ( <i>Chasmistes liorus</i> )                         | Endangered | Utah Ecological Services Field Office            |
| Fishes | Razorback sucker ( <i>Xyrauchen texanus</i> )                    | Endangered | Upper Co. River Endangered Fish Recovery Program |



| Group     | Name                                                 | Status     | Lead Office                               |
|-----------|------------------------------------------------------|------------|-------------------------------------------|
| Flowering | Deseret milk-vetch ( <i>Astragalus desereticus</i> ) | Threatened | Utah Ecological Services Field Office     |
| Flowering | Clay phacelia ( <i>Phacelia argillacea</i> )         | Endangered | Utah Ecological Services Field Office     |
| Flowering | Ute ladies'-tresses ( <i>Spiranthes diluvialis</i> ) | Threatened | Utah Ecological Services Field Office     |
| Mammals   | Canada Lynx ( <i>Lynx canadensis</i> )               | Threatened | Montana Ecological Services Field Office  |
| Mammals   | North American wolverine ( <i>Gulo gulo luscus</i> ) | Candidate  | Nebraska Ecological Services Field Office |

**UTE LADIES' TRESSES**



**DESERET MILK-VETCH**

**ONLY GROWS IN UTAH COUNTY**

## CONCLUSION

- Listed are all currently known endangered species, their presence should indicate that sufficient funds be provided to include mitigation of the project.
- Relocation of a transportation facility to a right-of-way adjacent to but not impacting an endangered species should be considered.
- Fish and Wildlife and the Army Corps of Engineers and the Utah Division of Wildlife Resources should be contacted during the planning of any corridor to determine more precise wildlife habitat impacts.

### **CONCLUSION**

The Community Impacts Assessment section outlines the many ways in which transportation facilities can impact our social, economic, and material lives. The projects in the Long Range Plan can be followed throughout the section and implementing agencies should become aware of the potential needs to mitigate projects in their communities.

This community and environmental impact assessment is not complete environmental review for the project proposed, but it is a general indicator of potential problems. Early identification of problem areas should aid in the design phase of project development and help alleviate the costs associated with problematic alignments of corridors that could be adjusted in this early planning stage.

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## **SYSTEM MANAGEMENT**

A part of providing efficient public infrastructure is to ensure that unnecessary obstacles to mobility are not included or are removed from the transportation system. The congruence between the regional growth principles and UDOT's four strategic goals is again reflected, as their second goal is to "make the system work better." This can include installing sidewalks in areas that lack them, providing handicap access, the use of traffic sensors and cameras to monitor and measure traffic, and allowing transit to operate better when interfacing with automobile traffic. Local governments also give vital support to both system management and demand management. Transportation System Management (TSM) strategies include incident management, ramp metering, High Occupancy Vehicle / Toll (HOV / HOT) lanes, signal coordination, access management, and Intelligent Transportation Systems (ITS), which overlaps several of the previous strategies. Most of these strategies are currently applied to some degree but need to be expanded or enhanced for greater benefit to the performance of the transportation system. Putting such congestion mitigation into place helps preserve the original design capacity of the facility so the highway can accomplish its intended purpose of moving a certain volume of traffic. For example, a highway with numerous access points of side streets or driveways will experience diminished capacity due to side friction, accidents, and reduced speeds and this may lead to an apparent need for additional capacity, when in reality, if access management were in place, the roadway would function as intended.

Transportation Demand Management (TDM) strategies include transit service in all its forms (bus, light rail, commuter rail, and bus rapid transit), ridesharing, flextime, telecommuting,

pedestrian and bicycle accommodations, growth management, and congestion pricing. Many of these strategies are currently applied as part of the existing transportation network. Increased implementation of these strategies is needed to provide sufficient options to the traveling public, as well as to decrease congestion levels on highways. The environmental, social, and financial consequences of only building and widening highways further point to the need to reduce the demand for single-occupant vehicle travel. The benefits to the transportation system from TSM and TDM include improved operating efficiency, preserving design capacity of existing facilities, improved safety, reduced energy consumption, and reduced emissions. These benefits stem from the improved operation of existing facilities when TSM strategies are implemented and from the reduction in vehicle trips as TDM strategies are applied.

## **SYSTEM PRESERVATION**

During the life of the transportation plan the network of highways, transit, pedestrian, bikeways, and other transportation systems will evolve in to an urban transportation network. Proper maintenance and preservation can maximize the life and effectiveness of transportation system, and better extend lifespan and capacities. The proper management of pavement conditions and travel demand extends the life and effectiveness of the system by requiring less reconstruction costs and reducing the number of vehicles using the system.

Upkeep of highway pavement provides public infrastructure that is efficient and adequately maintained and is in line with UDOT's strategic goal to "take care of what we have." One of the best ways to accomplish this objective is through a Pavement Management program.



UDOT and most municipalities and the county employ techniques to maintain their roadways. Pavement maintenance represents one of the largest capital investments on the transportation system. Maintaining pavement on a large regional highway system typically involves complex decisions about how and when to schedule resurface projects or when to apply other treatments to keep the highway performing while maintaining operating costs at a reasonable level. Current methods, mostly at the local level, leave these decisions up to individual road supervisors who would select treatments based on extensive knowledge and experience for their local area. This method works well in low traffic areas, but as the region grows more regional strategies will need to be employed. A main hurdle will always be funding. There is never enough funds to complete all identified road repairs when balanced with expansion needs and other budget constraints. A well planned regional pavement management program can bring more science into this process creating better efficiencies. A pavement management system consists of three major components:

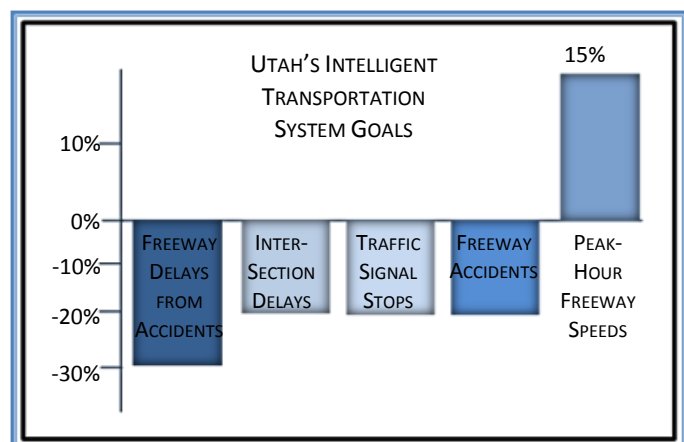
- A system to regularly collect highway condition data
- A computer database to sort and store the collected data
- An analysis program to evaluate repair or preservation strategies and suggest cost effective projects to maintain highway conditions

Many of these systems are currently being developed and installed throughout the valley. As the regional system expands, these components can be combined with planning needs and political considerations to develop annual highway repair and preservation programs.

## INTELLIGENT TRANSPORTATION SYSTEMS

“Non-recurring” congestion, such as that caused by traffic accidents, highway construction, or weather conditions, has been estimated to account for around 50 percent of traffic congestion in the region. Intelligent Transportation Systems (ITS) are a vital tool to manage the effects of nonrecurring congestion. One element of these systems includes dynamic message signs to alert motorists of upcoming incidents so that they can take an alternate route. Communication systems to speedily alert emergency management providers, traffic control centers, dispatch, incident management personnel, the media, and others about incidents are also part of ITS. Detectors and cameras further aid in verifying and managing these situations. The ability to implement prepackaged signal timing plans to respond to traffic changes from incidents is another aspect of ITS.

ITS can also be used to better manage recurring congestion, such as occurs during weekday peak commuting times. This is accomplished through means such as signal timing plans on arterial streets and ramp metering to improve freeway traffic flow. Coordinating signals can reduce delays by 20 to 30 percent. Ramp metering also has significant effects in decreasing delay.



Another way in which ITS addresses both non-recurring and recurring highway congestion is through improving the efficiency and convenience of the transit system, thus increasing ridership and reducing single-occupant vehicle travel. Riders can be notified in “real-time” of bus and rail travel times and connecting transit service through electronic signs, the internet, phone systems, and other means. The transit fleet can be better managed in response to changing traffic conditions. Voice enunciators and smart card payment systems are also part of transit ITS.

The following are an example of ITS projects that are being planned for MPO planning area. A more complete list can be found in the Mountainland ITS Deployment Plan.

- **Closed Circuit Television Camera Surveillance:** provides real-time picture of highway conditions and incidents on routes throughout the highway system.
- **Advanced Rail Crossing Warning:** alerts drivers of a blocked rail crossing well in advance so that the driver may take an alternate route.
- **Traffic Monitoring Stations:** provides vital, real-time information about traffic volumes and speeds.
- **Road Weather Information System:** provides real-time information on weather and pavement conditions that can then be relayed to the traveling public.
- **Variable Message Signs:** provide the traveling public with information about road conditions ahead so that the driver can take appropriate action.
- **Highway Advisory Radio:** provides traveling public advice about road and weather conditions via a car radio frequency.
- **511 Traveler Information Hotline:** Voice activated phone system that delivers real-time information on construction and maintenance projects, road closures, major delays, special events, weather and road conditions, and transit operations.
- **Transportation Information Website:** provides real-time information on construction and maintenance projects, road closures, major delays, special events, weather and road conditions, and transit operations.
- **Hazardous Materials Management:** a computerized model that provides information about the movement of hazardous materials through the area.
- **On-board Passenger Counting System:** provides vital information about passenger boarding and alighting by location and time of day.
- **Electronic Reader Boards:** Located at train stations and at key bus stops, they give arrival times and traveler information for incoming buses and trains.
- **Traffic Signal Interconnect Projects:** Link traffic signals to allow better signal coordination along main corridors and better access to update signal timing plans.

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## CONGESTION MANAGEMENT PROCESS

A Congestion Management Program is under the direction of the MPO Technical Advisory Committee (TAC). This committee evaluates congestion problem areas, determines the possible causes of congestion, and identifies

strategies to alleviate congestion and improve transportation efficiency. If congestion can be alleviated by congestion mitigation strategies alone, then these strategies will be proposed in place of the capacity-increasing project. Where additional general-purpose lanes are determined to be an appropriate strategy, congestion management strategies will be proposed along with the project. This is done to maintain the functional integrity of the additional lanes as well as to facilitate future demand management and operational improvements.

To fund congestion relief projects, MPO staff proposes congestion relief projects of regional importance that go through an evaluation process aimed at determining both the appropriate measures and regional congestion reduction benefits. The TAC committee reviews this list and make received additional proposals from sponsors to finalize a proposed program to fund. Sponsors are chosen for each project and are required to prepare a concept report for each project. MPO staff review the reports and make recommendations to the TAC committee of which projects to fund based on a ranking process. A final list is approved containing projects and programs based on the transportation. See the Mountainland MPO Congestion Management Process for more information.

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## HIGHWAY FUNCTIONAL CLASSIFICATIONS

Functional classification defines the role that each street, road, and highway will play in moving traffic from trip origins to destinations. Access is best served by streets with driveways and parking spaces convenient to the individual origin or destination of each traveler. Mobility

is best served by controlled access highways where there is minimum interference with the main traffic flow from side traffic. Since it is impossible to build a freeway between each origin and destination a compromise is needed; one that will provide the best practical balance between serving access and mobility.

- **Freeway:** provides full control of access, allowing smooth flow of through traffic with minimum disruptions by traffic entering or leaving the system. Some highways and expressways also fit within this category.
- **Expressway/Highway:** are a high functioning roadway with limited access and sometimes with grade separated intersections. In some cases these roadways can mimic a freeway, but usually they have lower standards in regards to shoulder and median widths, interchange or intersection spacing, or other design impediments.
- **Principal Arterials:** provide mobility but still allow access to many bordering activities.
- **Minor Arterials:** connect to principal arterials and carry traffic between less popular destinations and allow a greater degree of access.
- **Collectors:** connect scattered developments and neighborhoods while providing access to activities along their routes.
- **Local:** (not shown on the map) provide access to all roadside activities, homes, stores, business locations, etc. In combination the network formed by these various types of roads accommodates highway travelers.

Though the transportation plan lists only the needs of the regional highway system that function as a minor arterial up to a freeway, the collector and local system are an important

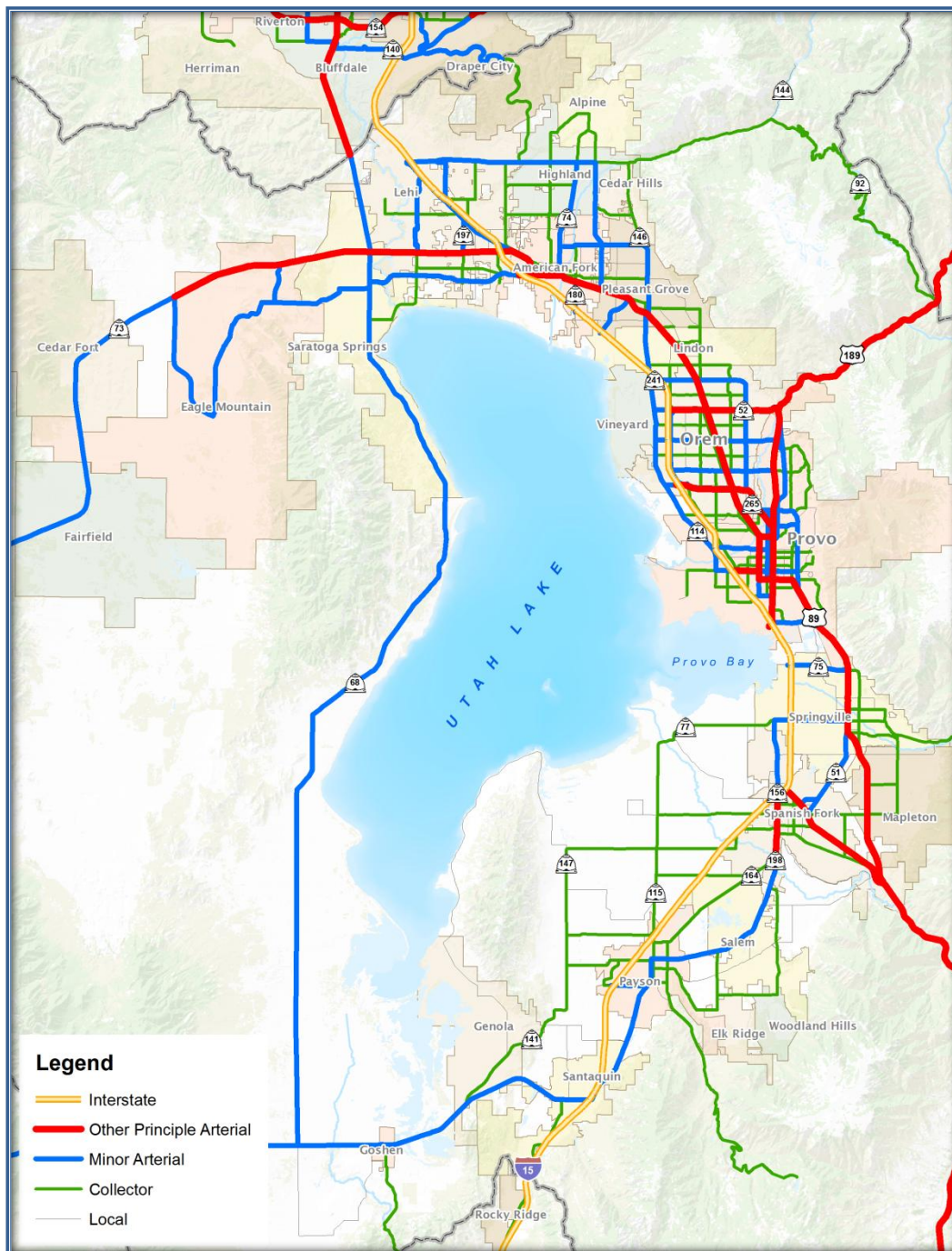


## TRANSPORTATION SYSTEM PROGRAMS

element of the system. This plan supports the collector road system that is listed on the Utah Functional Class Road System Map and all programs that support it. Though the capacity

needs are not listed in this plan, capacity and congestion relief projects remain eligible for MPO federal funding.

### HIGHWAY FUNCTIONAL CLASSIFICATION MAP



## REGIONALLY SIGNIFICANT CORRIDORS

This section describes the configuration and attributes of the principal highway corridors within the Utah County area today and what improvements are needed to the corridors within the transportation plan horizon.

➤ **I-15 Freeway**

The I-15 freeway is the main life line in Utah County. It is only one of two north/south corridors that traverse the urban area and the only freeway in Utah County. In recent years, the freeway has reached its capacity and is currently undergoing a major reconstruction project called the I-15 CORE project. This project will reconstruct the freeway between Spanish Fork and Lehi. The final configuration when complete will be 12 lanes between Lehi Main Street and University PKWY in Orem and 10 lanes south to Spanish Fork. Major ITS upgrades will be installed throughout the corridor to manage the system. Future improvements include continuing the 12 lane section through Lehi into Salt Lake County and widening the freeway to 6 lanes south of Spanish Fork south to Santaquin. New interchanges are proposed at Lehi 4000 North, Orem 800 South (HOV access only), Springville 1600 South, Spanish Fork Center Street, at the new proposed Nebo Belt EXPWY, and at UC 12400 South.

➤ **Orem 800 North / SR-52**

This is a major corridor providing connection for I-15 freeway to Provo Canyon and University Ave, which is a major corridor to Provo with access to the Wasatch Back. Recently, the corridor was widened to 6 lanes with an extensive trail parkway system installed between Orem 400 West and 1000 East. This configuration

is planned to continue west to Geneva Road as part of the I-15 CORE reconstruction project and later in the plan eastward to University Ave.

➤ **Pioneer Crossing / SR-145**

This new corridor is the primary access for Eagle Mountain, Saratoga Springs, and west Lehi to I-15. It is a four lane highway, from State Street in American Fork to Redwood Road in Saratoga Springs, with six lanes near I-15. This corridor was constructed to relieve extreme congestion on Lehi Main Street. Future plans include further expansion of Pioneer Crossing west of Redwood Road potentially becoming SR-73 near Eagle Mountain and converting the highway into a 6 lane expressway tying into the proposed Vineyard Connector which would traverse western Orem and Provo.

➤ **Provo Center Street / SR-114**

This is a major connection from downtown Provo to I-15. It is highly congested near the I-15 Freeway due to a narrow RR viaduct and the proximity of Provo 900 West to the freeway ramps. Major changes to capacity will occur with the I-15 CORE reconstruction project eliminating the narrow 2-lane RR viaduct and moving the freeway ramps farther west of the 900 West intersection.

➤ **Spanish Fork Main Street / SR-156**

This is a four lane facility with congestion mainly near the I-15 interchange. This will be addressed with the I-15 rebuild. The only other improvements planned for the corridor would be ITS, congestion management, and transit improvements. Also, new interchanges are planned north and south of the Main Street interchange at Spanish Fork Center Street and at Springville 1600 South. Both will

relieve congestion on Main Street by creating more travel options in the area.

➤ **Timpanogos Highway / SR-92**

Currently this corridor is under construction to expand it from its 2 lane configuration to 6 lanes with a combination of general purpose travel lanes and express lanes. Improvements will be between I-15 and the Alpine Highway in Highland. These improvements as well as the expansion of North County Blvd (Utah County 4800 West) will enhance travel options in this high growth area. Future improvements will include Bus Rapid Transit.

➤ **University Parkway / SR-265**

This is a major east/west arterial road between Provo and Orem connecting both cities to the I-15 freeway. This corridor has the highest traffic volumes of any non-freeway corridor in the county with over 50,000 trips a day. It is a major commercial corridor with limited access to adjacent businesses. Major intersections are highly congested. The parkway has a six lane configuration in most of Orem and four in Provo. The College Connector Trail, which runs parallel to the Parkway, provides a bike and pedestrian option for travel and recreation along this corridor. Planned improvements for University Parkway include widening the remaining 4 lane sections eastward to University Ave to six lanes, improving trail access, and adding a Bus Rapid Transit (BRT) facility. As with other major corridors ITS, congestion management, and improved transit will be used to further mitigate congestion.

➤ **University Ave / US-189**

This principal corridor is a main thoroughfare through Provo providing important access to BYU, major shopping centers, East Bay, and downtown Provo.

This is also an alternative route connecting south Utah County to both Orem and Provo. University Ave provides access to Provo Canyon and the north eastern portion of the state and is one of the major truck routes through Utah County. University Ave is currently six lanes south of Provo 920 South and four lanes to the north. Future projects would include reconstruction and widening of the RR viaduct at Provo 600 South, widening the corridor north of University Parkway to Orem 800 North, and a Bus Rapid Transit System through Provo. Improvements to it as well as better east/west improvements proposed in this plan will greatly diminish congestion on this corridor.

➤ **US-89**

- **State Street -- I-15 FWY, Lehi to American Fork Main Street:** There is currently little congestion on this segment of State Street except for individual intersections around The Meadows shopping district in American Fork. Initially, this road was built as the "main highway" connecting Utah County to Salt Lake County. As the I-15 freeway is now functioning in that role there is excess capacity for traffic volume in this segment. Capacity expansion is needed in The Meadows Shopping area in American Fork and where the corridor joins I-15 in north Lehi. The Lehi 2100 North interchange will be reconfigured realigning State Street with Thanksgiving Way.
- **State Street / American Fork Main Street -- I-15, American Fork to Lindon 200 South:** This segment is the major north/south arterial road in the north part of the county. Planned construction proposes this roadway to expand to 6 lanes throughout the area

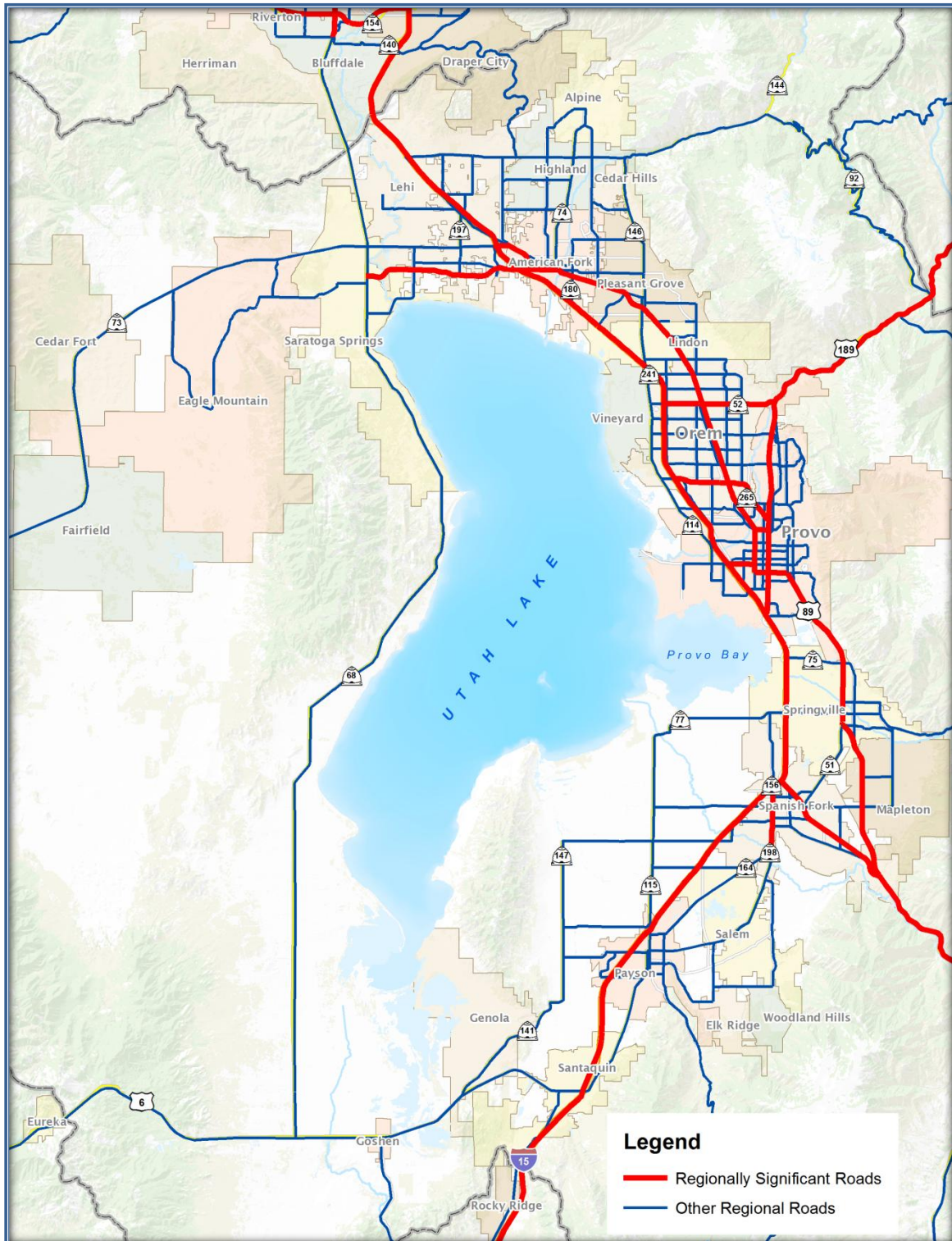


with the exception of the Downtown American Fork area. Due to its historic nature, expansion is not proposed. Added capacity to Pacific Drive to the north of the downtown and an extension of Pacific DR over I-15 to Pioneer Crossing is proposed to handle travel demand in the area.

- **State Street -- Orem 2000 North to Bulldog Blvd, Provo:** This road is the major north / south corridor through the urban area. Currently, about 50,000 vehicles a day travel segments of this corridor. In comparison, State Street in Salt Lake County carries 35,000 vehicles at best. The road is built out to a six lane configuration and there are no plans to further expand this facility. Instead congestion management methods and ITS infrastructure along with transit improvements will be used to mitigate the high traffic volumes. Also improving other north/south roads though Orem as well as better east/west connectivity to I-15 in Provo would aid in congestion relief for this road segment.
- **Provo 500 West -- Provo 300 South to Bulldog Blvd:** This segment is currently at four lanes through the area. It is one of the more congested roads in the area. There are no plans to further expand this facility. Other improvements would include ITS, transit, and further congestion management methods. Better east/west connections to I-15 would also relieve congestion on this corridor.
- **Provo 300 South -- Provo 500 West to Provo 700 East:** Currently with four travel lanes this corridor experiences minimal congestion. Other than reconstruction and ITS improvements, no capacity improvements are proposed.
- **South State Street / Springville Main Street:** Traversing south Provo to Springville this is a four lane highway into Springville that transitions into an urban downtown facility. There are no plans to further expand this facility. Congestion management methods and ITS infrastructure along with transit improvements will be used to mitigate the traffic volumes.
- **Springville to Mapleton:** In this segment US-89 has four and two lane segments that are primarily a rural highway connecting to US-6 Spanish Fork Canyon. Improvements are proposed to widen the road from Springville through parts of Mapleton. At its southern terminus, it is proposed to realign this facility to connection to the proposed Nebo Belt Loop Expressway.

## TRANSPORTATION SYSTEM PROGRAMS

***REGIONALLY SIGNIFICANT CORRIDORS MAP***



## PARATRANSIT / MOBILITY

Paratransit is a service offered to persons with disabilities in the Utah Valley area and is in compliance with the Complementary Paratransit Service provision of the Americans with Disabilities Act (ADA). The service is provided by the United Way of Utah County through the direction of UTA who is responsible for mobility compliance with the ADA act for the Wasatch Front. Paratransit offers transportation to persons who are prevented from using the fixed UTA routes available to the general public. Persons who are mentally, physically, or temporarily disabled may be eligible for the service. Eligible riders may ride to and from any location within the Utah Valley UTA service area. An application for determining who may be eligible can be obtained from the United Way Transportation Services of Utah County. Once a person has applied and been approved to ride the Paratransit system, they can schedule trips by calling United Way.

The future of paratransit service in Utah Valley will involve change and expansion to make it more efficient and able to keep up with the increasing demand. The future Paratransit system will need to implement if the following changes.

- Replacement of older vans in the paratransit service will help keep the system efficient. This coupled with UTA's replacing non-wheelchair lift equipped buses on its regular route with wheelchair lift equipped ones, should allow the service to remain in compliance with ADA needs and requirements. All UTA regular service buses are wheelchair lift equipped.
- Scheduling will need to be upgraded to help keep up with future demand. Currently, all schedules are done by

hand and then entered into a computer. This is a time consuming process. As demand for scheduling grows, this process will need to be changed. By purchasing computer-scheduling software, the process would be simplified.

- Smaller wheelchair lift equipped vans for paratransit service can be used for times when demand is low or on trips that are far away from the central service area. Smaller vans have a shorter life expectancy than the larger vans, but lower cost should make the smaller vans more viable.

The MPO supports efforts to more fully coordinate the specialized transportation needs of seniors, disabled individuals, and eligible low income populations. It is our intention to prepare a Coordinated Human Services Plan that will be part of the Statewide Coordinated Plan prepared in partnership with UDOT and other local partners to meet the requirements under SAFETEA-LU to access FTA Section 5310, 5316, and 5317 funds. Additionally, the MPO will competitively select projects, and facilitate the inclusion of those projects selected for funding to be listed in the Transportation Improvement Plan and Statewide Transportation Improvement Plan.

A recent emphasis has been put upon local areas to learn to coordinate the method in which they provide transportation to various individuals who need special assistance by Human Service Providers. Currently each of those providers have methods of transporting their clients as needed, however they are done in a silo of service and often are duplicative or inefficient. The Federal government has therefore put forth an initiative to try to coordinate and share services thereby hopefully decreasing the resources required to provide that service.



A strategic study was conducted that determined a need to develop local area coordinating councils to try to integrate some services or aspects of service. Utah County has formed its own regional coordinating council as has Salt Lake and certain aspects are progressing toward that end goal.

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## **TRANSPORTATION SECURITY**

The security of the transportation system is a national and regional priority. The focus of the MPO is to support ongoing local, state, and federal initiatives to address transportation system security and emergency preparedness planning in Utah County. The MPO continues efforts to improve the security of our regional transportation system by working with leaders of local governments, UDOT, UTA, Utah Division of Homeland Security and various federal agencies to prepare for a regional incident.

Coordination meetings with these groups and MPO staff have identified the following security related plans, documents, and systems that currently exist.

- Mountainland Pre-Disaster Hazard Mitigation Plan
- Mountainland Interoperability Emergency Communications Plan
- Utah Division of Homeland Security(UHS) Critical Infrastructure Plan
- UHS Strategic Highway Military Plan
- Utah Traffic Operations Center
- UHS “Be Ready Utah” public information system
- UTA Transit Security Plans
- Community Emergency Management Plans

In addition to the coordination efforts, the MPO used its unique transportation modeling ability to simulate traffic after a major disaster to better understand system redundancy. As a portion of the Mountainland Pre-Disaster Hazard Mitigation Plan, staff used FEMA’s HAZUS model to simulate a 7.0 earthquake along the Wasatch Front. Included in the accompanying damage assessment report is a listing of bridges that may be susceptible to potential damages and the usable capacity of those bridges at certain intervals after the event. A model run was done to simulate traffic 7 days after the event. A simple initial redundancy analysis was done to identify potential choke points in the event of a disaster.

The primary goal of the MPO is to improve the security of our transportation system throughout the region by supporting ongoing local, state and federal initiatives that address transportation system security and emergency preparedness planning in the Mountainland region. The MPO will continue coordination with local state and federal agencies to improve transportation system security, integrate system security and redundancy into the project selection and construction process and provide transportation modeling as a tool for security and emergency management planning.

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## **TRANSPORTATION ENHANCEMENTS**

UDOT manages the Transportation Enhancement Program for the entire state without sub allocation to the MPOs. This program provides opportunities to use federal highway dollars to enhance the cultural, aesthetic and environmental aspects of the nation's inter-modal transportation system. To qualify for funding, all projects must be related to surface transportation and fit into at least

## TRANSPORTATION SYSTEM PROGRAMS

one of the following 12 federally designated activities:

1. Provision of facilities for pedestrians and bicycles
2. Provision of safety and education activities for pedestrians and bicyclists
3. Acquisition of scenic easements and scenic or historic sites
4. Scenic or historic highway programs and provision for tourist and welcome center facilities
5. Landscaping and other scenic beautification
6. Historic preservation
7. Rehabilitation and operation of historic transportation buildings, structures or facilities
8. Preservation of abandoned railway corridors
9. Inventory, control and removal of outdoor advertising
10. Archaeological planning and research
11. Environmental mitigation of runoff pollution and provisions related to wildlife connectivity
12. Establishment of transportation museums

Utah's annual apportionment for this program is approximately \$6,000,000. Historically, \$2,000,000 has been programmed for local government projects and \$4,000,000 programmed on UDOT Transportation Enhancement Projects.

Recently funded projects under (SAFETEA-LU from 2005 to present) in the MAG MPO include the provision of facilities for pedestrians and bicycles and the provision of safety and education activities for pedestrians and bicyclists.

- Orem 800 South/UVU Extension Bike Lane Improvements
- Provo University AVE Greenway Extension, US-189
- Provo River Bridge Replacement
- Historic Union Pacific Rail Trail, Lehi
- Point of the Mountain Trail, Draper
- Construct Sidewalks on SR-198 between Payson and Santaquin
- Sweetwater/Pony Express Trail, Eagle Mountain
- Widen shoulders on US-89; Springville to Provo
- SR-73 Trail Undercrossing near Jordan River
- Dry Creek Trail Pedestrian Underpass, Payson
- Bonneville Trail Underpass, Highland
- Art Dye Trail, American Fork
- Lindon Heritage Trail: East Phase
- Pleasant Grove BLVD Trail; I-15 to State Street
- Pedestrian Safety Santaquin City

The Utah Transit Authority the transit service provider and FTA grant recipient for this MPO spends 1% of FTA funds on transit enhancements activities including: bus shelters, ADA compliance surfacing, bike lockers, bike racks on buses, etc.

In addition to these formal funding programs The MPO analyzes each new capacity project during the MTP development for opportunities to enhance the planned capacity projects with bicycle/pedestrian community enhancements (e.g. adding shoulders for bike commuting, safe routes to school considerations), community and environmental impact reduction (e.g. sound walls, historic preservation) and transit system enhancements (e.g. bike racks on buses bike lockers.)

## FINANCIAL PLAN REQUIRED

The metropolitan transportation plan, which has a minimum 20-year planning horizon, must include a financial plan that estimates how much funding will be needed to implement recommended improvements, as well as operate and maintain the system as a whole, over the life of the plan. This includes information on how the MPO reasonably expects to fund the projects included in the plan, including anticipated revenues from FHWA and FTA, state government, regional or local sources, the private sector, and user charges. The metropolitan transportation plan must demonstrate that there is a balance between the expected revenue sources for transportation investments and the estimated costs of the projects and programs described in the plan. In other words, a metropolitan plan must be fiscally (or financially) constrained. Federal regulations require that the Metropolitan Transportation Plan conform to air quality conformity rules and be fiscally constrained.

*“(A)Transportation Plan— A transportation plan under this section shall be in a form that the Secretary determines to be appropriate and shall contain, at a minimum, the following: (C)Financial Plan— A financial plan that demonstrates how the adopted transportation plan can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan, and recommends any additional financing strategies for needed projects and programs. The financial plan may include, for illustrative purposes, additional projects that would be included in the adopted transportation plan if reasonable additional resources beyond those identified in the financial plan were available. For the purpose of developing the transportation plan, the metropolitan planning organization, transit operator, and State shall cooperatively develop estimates of funds that will be available to support plan implementation.”*

Unified Transportation Plan (summary of all MPO plans and rural areas). In order to ensure consistency for this Unified Plan, each individual MPO transportation plan and the rural area plan followed a common set of demographic, financial, cost estimating, and related assumptions. Therefore, the cost assumptions proposed for the Mountainland transportation plan update are consistent with those made statewide.

This section is a response to the Federal requirement to produce a “financially constrained” transportation plan. Funding assumptions are developed for planning

purposes only. They do not suggest endorsement of any particular tax or transportation funding solution on the part of the MPO or the MPO’s Regional Planning Committee. This effort is also not intended to craft optimal public taxing policy to fund transportation infrastructure. Rather it is a statewide attempt

to develop a reasonable set of funding assumptions that are based, at least in part on the past history of the federal government and the state legislature as it relates to funding transportation infrastructure. The amount and identified funding mechanisms in all likelihood will end up different than what is described.

Mountainland MPO transportation funding policy is first grow the economy, second

## MOUNTAINLAND MPO FUNDING POLICY

Funding assumptions for the transportation plan are based on coordination between Utah MPOs (Cache, Dixie, Mountainland, and Wasatch Front) and UDOT. Utah follows an advanced practice in the development of a



reallocation of existing funds, third entertain tax rate adjustments as a last resort. We recognize that when the state legislature has become aware of the need for transportation funding they have stepped forward with funding from a variety of sources to meet those needs. We further recognize it is the MPOs responsibility to determine the transportation needs within the region and to forward solutions to the legislature, but ultimately the amount and type of funding is the prerogative of the legislature and local politicians.

It is important to note that, on average, the legislature has made significant funding increases to transportation every 11 years. Historically, this has occurred though a gas tax, but the last infusion occurred with state general funds. Increased statewide economic growth that results in greater than expected increase in revenue from existing funding sources could also eliminate the need to even consider additional tax increases. State law allows surpluses in general fund revenue to be allocated to public education and/or transportation as has happened in the past.

The following statewide assumptions regarding long-term funding for transportation projects in Utah are drawn collectively from all concurrent transportation plans and are included in the Mountainland MPO Transportation Plan. They keep funding generally at the same level that has historically occurred in the last 30 years.

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## SOURCES OF TRANSPORTATION FUNDS

Transportation funds are generated from a number of sources, including sales tax, tolls, bonds, and state, local, and federal excise taxes on various fuels, and credit assistance sources.

Each state decides which mix of funds is best suited to carry out particular projects.

Federal funds are authorized by Congress for the U.S. Department of Transportation (DOT), which allocates funds into various programs before redirecting those funds to the states. Some primary examples of these programs include the Surface Transportation Program, the Federal Lands Highway Program and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. FTA oversees the allocation of federal transit funds, which generally fall into two major categories: capital grants for transit operators that are apportioned to areas by national formula, and transit capital investment grants that are awarded on a "discretionary" basis, as determined by DOT on the basis of a series of evaluation criteria.

Federal legislation also provides formula funds to support planning studies and report preparation for the transportation planning process through FHWA's State Planning and Research Funds and Metropolitan Planning Funds, and through FTA's Section 5305. These planning funds generally make up a large portion of the state or MPO budget for conducting necessary studies and for developing transportation plans, State Transportation Improvement Programs (STIP) and MPO Transportation Improvement Programs (TIP) and other planning documents.

## STATE FUNDS

The Utah Department of Transportation (UDOT) receives state highway user revenues as well as state general funds for highway maintenance, construction, expansion, and operations. Highway user revenues sources include motor fuel taxes, special fuel taxes, vehicle registration fees, drivers' license fees, and other fees. General funds include sales taxes and other

taxes. In addition, the state has the authority to issue bonds for specific highway projects. Major infusions of funding for expansion projects include the Centennial Highway Fund (CHF) and the Transportation Investment Fund (TIF). With the approval of an increase in the state gasoline tax and other fees in 1997, the State Legislature created the Centennial Highway Fund to fund major highway needs throughout the state. This program included bonding and had a set life span of about 20 years. In 2005, Legislature created the TIF. This fund receives 8.3% of the total state general funds which is about half of the transportation related state sales taxes collected. This fund infused needed funding for highways and unlike the CHF fund, will grow with inflation and the economy. It is proposed in this plan that the TIF program will be expanded to include all automobile related sales taxes collected in 2017, which is about 16.6 percent of the total state general fund.

## LOCAL FUNDS

A major funding source to counties and municipalities is the Class B and C Road Fund. Thirty percent state highway user revenues are distributed to local governments for highway construction through this program. Class B (counties) and C (municipalities) funds are allocated by a formula based on population and road mileage. These funds can be used for either maintenance or construction of highways, although at least 30 percent of the funds must be used for construction projects or for maintenance projects that cost over \$40,000. This program combined with general fund monies make up the majority of funding resources available to local governments for transportation.

At the county level, Utah County collects taxes for the Local Corridor Preservation Fund which collects a \$10 per vehicle registration fee, with

the funds to be used for transportation corridor preservation. These funds can be used by local governments to acquire properties that are in transportation corridors identified by the MPOs transportation plan. Three quarter-cent sales taxes are collected in Utah County for transportation. The first quarter-cent tax is currently only collected by municipalities that belong to the Utah Transit Authority (UTA) district with each city's voting public enacting the tax. It is used by UTA to expand and operate the transit system. The second quarter-cent sales tax was voted by referendum in 2006 on a countywide ballot. As per the ballot language, 8 percent of the tax collected goes to highway projects, 5 percent to bus service, and 87 percent to construction of commuter rail. The third quarter-cent sales tax are approved by the Utah County Commission in 2008 with 100 percent of taxes collected programmed for highway projects. A fourth quarter-cent sales tax is proposed in this plan to be enacted upon in 2020 to fund major transit expansion.

## PRIVATE FUNDS

Private interests are a major contributor when funding transportation improvements. Private development participates by dedicating right-of-way through their developments and in the construction of many local, collector, and arterial roads. Transit Oriented Developments that offer public-private arrangements can also contribute to the overall transportation system. The private sector can be willing to support either capital expenses or operating costs for transit services which provide them with special benefits, such as a reduced need for parking or increased accessibility to their development.

Developers should also be considered as a possible source of funds for projects needed because of the impacts of the development, such as the need for traffic signals or arterial street widening.

## FUNDING - PLANNING

### ASSUMPTIONS

Note that a greater than expected increase in revenues due to economic growth could mitigate any need for tax rate increases. The following planning assumptions are only used to determine, a “Reasonable” future revenue assumption as required by federal law.

### STATEWIDE 2040 FUNDING - PLANNING ASSUMPTIONS:

- Federal funds and programs are projected to increase at a rate of 2% per year.
- The B&C program is projected to continue at the present 30% of total fuel tax revenue.
- All financial assumptions are presented in future year dollar values at 4% annual inflation.
- Currently 50% of auto related sales tax goes to transportation. The remainder goes to the state general fund. For planning purposes, it is assumed that by 2017, 100% of auto related sales tax will be dedicated to transportation. This does not represent any new tax, rather a reallocation of how the existing tax revenue is allocated.
- A 5-cent increase in statewide fuel tax (or some other equivalent) in 2014 and each decade after. This projection would continue the historical average of what funds are dedicated to transportation and allows for inflation for state projects and local projects through the B&C program.
- A \$10 statewide increase in vehicle registration fees in 2018 and each decade after.

### PLANNING FUNDING ASSUMPTIONS

| Statewide Funding Assumptions                  |
|------------------------------------------------|
| All Auto Related Sales Tax = 2017              |
| 5-cent Gas Tax = 2014 + 10 Yrs                 |
| \$10 Vehicle Registration Fee = 2018 + 10 Yrs  |
| State Funds Growth = 3%                        |
| Federal Funds Growth = 2%                      |
| Region Funding Assumptions                     |
| \$5 Vehicle Registration Fee = 2018 + 10 Yrs   |
| All Vehicle Reg. Fees Funds Growth = 2%        |
| 4th 1/4-Cent Sales Tax - (100% Transit) = 2020 |
| Local Funds Growth = 5.25-5.50%                |

### LOCAL 2040 FUNDING - PLANNING ASSUMPTIONS:

- A \$5 county increase in vehicle registration fees in 2018 and each decade after.
- All vehicle registration fees grow at a rate of 2% per year.
- 1/4-cent sales tax in 2020 dedicated to transit.
- All local sales tax funds are projected to increase at a rate of 5.25-5.50% per year.
- Increase in transit fares and advertising income.

### REVENUE FORECASTING

Federal surface transportation legislation requires that the MPO, the state DOT, and the public transit agency cooperatively develop revenue forecasts. These forecasts help agencies determine the level of funding that is likely to be available for transportation projects in their respective areas. Forecasts are based on trends from existing and potential funding sources such as the gas tax or bond measures.



Proposed Funding Sources must be "reasonably" expected to be available. In developing the transportation plan for Utah's four MPOs and the rural areas, the MPOs, UDOT, and the three urban transit agencies worked collaboratively to produce statewide revenue projections that would be available uniformly across the horizon years of the five transportation plans. This approach has afforded a better understanding of what funding has been available in the past to the state as a whole, and what can reasonably be assumed for future funding.

The State Transportation Commission programs these funds based on statewide needs. For planning purposes, the MPOs and the state propose in their respective plans that future funding, outside of what is already programmed in the State Transportation Improvement Program and the MPO Transportation Improvement Programs, be distributed based on each areas proportionate share of population.

## PLANNED REVENUE

For highway projects the majority of the major highways listed in the transportation plans are under UDOT's jurisdiction. Historic dispersion of highway funding has no geographic distribution requirements, in other words, no formula is used to program funding to an MPO or rural area.

| Planned Revenue<br>Funds in Millions Inflated to Planning Phase | Planning<br>Funds | Phase 1<br>2011-2020 | Phase 2<br>2021-2030 | Phase 3<br>2031-2040 |
|-----------------------------------------------------------------|-------------------|----------------------|----------------------|----------------------|
| <b>UDOT FACILITIES</b>                                          |                   |                      |                      |                      |
| <b>HIGHWAY REVENUE</b>                                          |                   |                      |                      |                      |
| New Capacity Projects                                           | 6,837.1           | 616.3                | 2,120.6              | 4,100.2              |
| Bond Revenue (less costs)                                       | 676.9             | 166.3                | 510.6                | 0.0                  |
| Current Projects & Federal Earmarks                             | 2,389.7           | 2,115.7              | 127.0                | 147.0                |
| Preservation and Operations                                     | 2,368.1           | 556.4                | 756.4                | 1,055.3              |
| <b>Total UDOT Revenue</b>                                       | <b>12,271.9</b>   | <b>3,454.7</b>       | <b>3,514.6</b>       | <b>5,302.5</b>       |
| <b>ALL REGIONAL FACILITIES</b>                                  |                   |                      |                      |                      |
| <b>HIGHWAY REVENUE</b>                                          |                   |                      |                      |                      |
| MPO Federal Funds                                               | 225.3             | 60.8                 | 74.1                 | 90.4                 |
| 2nd 1/4-Cent Sales Tax (8% Roads / 92% Transit)                 | 80.5              | 14.3                 | 24.4                 | 41.7                 |
| 3rd 1/4-Cent Sales Tax (70% Roads / 30% Transit)                | 804.7             | 143.0                | 244.3                | 417.3                |
| \$10 Vehicle Registration (Started in 2008)                     | 141.2             | 38.3                 | 46.5                 | 56.4                 |
| \$5 Vehicle Registration (2018 and every 10 years)              | 225.6             | 6.3                  | 53.8                 | 165.6                |
| B & C Funds - 10%                                               | 125.0             | 23.4                 | 38.6                 | 63.0                 |
| Municipal General Fund Contributions - 10%                      | 188.2             | 45.3                 | 60.9                 | 81.9                 |
| Developer / Private Funds                                       | 686.0             | 165.3                | 222.2                | 298.6                |
| <b>Total Regional Revenue</b>                                   | <b>2,476.4</b>    | <b>496.7</b>         | <b>764.8</b>         | <b>1,214.9</b>       |
| <b>Total Highway Planning Revenue</b>                           | <b>14,748.3</b>   | <b>3,951.4</b>       | <b>4,279.4</b>       | <b>6,517.4</b>       |
| <b>UTA</b>                                                      |                   |                      |                      |                      |
| <b>TRANSIT REVENUE</b>                                          |                   |                      |                      |                      |
| 1st 1/4-Cent Sales Tax (100% Transit)                           | 829.4             | 152.4                | 253.7                | 423.3                |
| 2nd 1/4-Cent Sales Tax (8% Roads / 92% Transit)                 | 962.9             | 176.9                | 294.6                | 491.4                |
| 3rd 1/4-Cent Sales Tax (70% Roads / 30% Transit)                | 50.0              | 50.0                 | 0.0                  | 0.0                  |
| 4th 1/4-Cent Sales Tax (100% Transit)                           | 550.1             | 0.0                  | 206.2                | 343.9                |
| FTA New Starts Funds and Region Funds                           | 1,781.8           | 234.0                | 189.0                | 1,358.8              |
| Federal Formula Funds                                           | 286.5             | 59.7                 | 90.2                 | 136.6                |
| Bond Revenue                                                    | 1,000.0           | 0.0                  | 0.0                  | 1,000.0              |
| Fare Revenue                                                    | 1,011.2           | 105.9                | 287.6                | 617.7                |
| Advertising Revenue                                             | 25.6              | 3.7                  | 8.2                  | 13.7                 |
| <b>Total Transit Planning Revenue</b>                           | <b>6,497.5</b>    | <b>782.6</b>         | <b>1,329.5</b>       | <b>4,385.4</b>       |
| <b>Total Highway and Transit<br/>PLANNED REVENUE</b>            | <b>21,245.8</b>   | <b>4,734.0</b>       | <b>5,608.9</b>       | <b>10,902.8</b>      |

For non state major highway projects (mostly minor arterials owned by the municipalities or the county) 10 percent of the B&C Road roads and municipal general funds are proposed to go toward operations, maintenance, and expansion of the system. Total revenue projected for highway construction, preservation and operations is \$14.7B.

Funding for transit projects is primarily obtained by local sales tax funding. Federal formula money and capital funding for rail and Bus Rapid Transit projects is projected or assumed in varying percentages as this money is discretionary will fluctuate depending on the competitive nature of the FTA New Starts process. Projected fare revenue will account for anywhere between 25-40% of operational revenue for any given project. Total revenue projected for transit construction, operations, and maintenance is \$6.5B. Total revenue assumed for the transportation plan through 2040 is \$21.2B.

## BONDING

Bonding is a tool utilized by the state, UTA, and the municipalities and county to use revenue streams over a period of time to fund needed transportation improvements earlier. Though there is no definitive outline of any future bonded projects past any that

are currently bonded, the state and UTA do have bonding capacities through the horizon of the transportation plan and do have a history of using this resource. The plan assumes that the state will utilize its bonding ability to fund future statewide highway packages. For the Mountainland MPO area, this translates into \$1.2B in highway bonding revenue and costs. A 4 percent bonding rate was used with a 20 year loan payoff schedule.

Bonding for transit projects is utilized at the discretion of UTA as the transit district and may be used for various projects to facilitate cash flow. For instance effective bonding is being used to build large projects such as the commuter rail project to Provo (bonding not detailed in our plan). For planning purposes bonding is only assumed when revenues for the phase don't complete a project within the planned phase of implementation in the transportation plan. For Transit this only occurs for the light rail line from Draper to Orem. The debt service or interest payments for the bond are not included in the Bonding Revenue and Debt Service Table because these costs are planned to occur past the 2040 end horizon of the plan. Total transit bonding is \$1.0B.

| Bonding Revenue/Debt Service<br>Funds in Millions to Planning Phase | Planning<br>Funds | Phase 1<br>2011-2020 | Phase 2<br>2021-2030 | Phase 3<br>2031-2040 |
|---------------------------------------------------------------------|-------------------|----------------------|----------------------|----------------------|
| <b>HIGHWAY<br/>BONDING AND DEBT SERVICE</b>                         |                   |                      |                      |                      |
| Bond Revenue                                                        | 676.9             | 166.3                | 510.6                | 0.0                  |
| Bond Debt Service (Interest Payments) <sup>1</sup>                  | 530.4             | 0.0                  | 122.4                | 408.0                |
| <b>Total Highway Bonding</b>                                        | <b>1,207.4</b>    | <b>166.3</b>         | <b>633.0</b>         | <b>408.0</b>         |
| <b>TRANSIT<br/>BONDING AND DEBT SERVICE</b>                         |                   |                      |                      |                      |
| Bond Revenue                                                        | 1,000.0           | 0.0                  | 0.0                  | 1,000.0              |
| Bond Debt Service (Interest Payments) <sup>2</sup>                  | 0.0               | 0.0                  | 0.0                  | 0.0                  |
| <b>Total Transit Bonding</b>                                        | <b>1,000.0</b>    | <b>0.0</b>           | <b>0.0</b>           | <b>1,000.0</b>       |
| <b>Total Highway and Transit<br/>PLANNED BONDING</b>                | <b>2,207.4</b>    | <b>166.3</b>         | <b>633.0</b>         | <b>1,408.0</b>       |

<sup>1</sup>Some highway bond debt service payments occur after 2040 and are not shown in the plan. Bond cost after 2040 is \$556M.  
<sup>2</sup>All transit bond debt service payments occur after 2040 and are not shown in the plan. Cost after 2040 is \$875M.

## SYSTEM PRESERVATION

UDOT estimates the cost to meet the needs for the administration, maintenance, and preservation of the state highway system through the life of the transportation plan to be \$2.4B. Expenditures are categorized by Operations, Pavement Preservation/Replacement, Bridge Preservation/Replacement, and Safety/Other. Operational costs are proposed to grow at 2 percent annual growth rate; all other activities are projected to grow at a 5 percent rate. Historically, system preservation activities have not been fully funded. Through 2040 a \$1.3B deficit is projected.

Operational expenditures are used to administer UDOT's region and central departments, support services, engineering services, maintenance management, region management, construction management, and equipment management. The MPO area share of UDOT operational expenditures statewide is based on the region's share of statewide VMT or 13%. Pavement preservation actions are treatments for streets and highways that range

from a chip seal up to a full reconstruction. UDOT estimated their costs for these activities. The MPO share of pavement preservation expenditures is based on the percent of state lane miles in the area or 17%. Keeping the current bridges maintained is one of UDOT's highest priorities. The cost of maintaining a structure is greatly less than total replacement. To estimate these expenditures for the MPO area, the percentage of bridges within the county, both on the state road system and local bridges, as compared to total bridges statewide was used or 9%. Safety improvements include hazard elimination, intersection upgrades, railroad crossing improvements, and other similar projects. Other projects include spot improvements such as signals, lighting, barriers, and department contingencies. The MPO area share of these expenditures is based on the region's share of state road miles or 17%.

The cost associated with operating and maintaining the transit system to 2040 is \$2.1B. Funding operations nationwide is a constant struggle that if not addressed can erode the efficiency of the system. UTA operational costs compare well with other transit agencies with a

| <b>System Preservation/Operations</b><br>Funds in Millions to Planning Phase | <b>Planning Funds</b> | <b>Phase 1</b><br>2011-2020 | <b>Phase 2</b><br>2021-2030 | <b>Phase 3</b><br>2031-2040 |
|------------------------------------------------------------------------------|-----------------------|-----------------------------|-----------------------------|-----------------------------|
| <b>HIGHWAY PRESERVATION/OPERATIONS</b>                                       |                       |                             |                             |                             |
| Bridge Preventive Maintenance                                                | 27.0                  | 9.0                         | 9.0                         | 9.0                         |
| Bridge Rehabilitation / Replacement                                          | 84.1                  | 15.9                        | 25.9                        | 42.3                        |
| Contractual Maintenance                                                      | 681.1                 | 128.9                       | 210.0                       | 342.1                       |
| Hazard Elimination, Safety, Enhancements                                     | 181.6                 | 34.4                        | 56.0                        | 91.2                        |
| Highway Rehabilitation / Replacement                                         | 81.6                  | 27.2                        | 27.2                        | 27.2                        |
| Operations                                                                   | 1,114.6               | 300.8                       | 366.7                       | 447.0                       |
| Region / Department Contingencies                                            | 17.9                  | 6.0                         | 6.0                         | 6.0                         |
| Signals, Spot Improvement, Lighting, Barriers                                | 180.2                 | 34.1                        | 55.6                        | 90.5                        |
| <b>Total HWY Preservation/Operations</b>                                     | <b>2,368.1</b>        | <b>556.4</b>                | <b>756.4</b>                | <b>1,055.3</b>              |
| Unmet System HWY Preservation Needs                                          | 1,285.8               | 243.4                       | 396.5                       | 645.9                       |
| <b>TRANSIT OPERATIONS/MAINTENANCE</b>                                        |                       |                             |                             |                             |
| Operations and Maintenance                                                   | 2,127.3               | 253.4                       | 602.4                       | 1,271.5                     |
| <b>Total Transit Operations/Maintenance</b>                                  | <b>2,127.3</b>        | <b>253.4</b>                | <b>602.4</b>                | <b>1,271.5</b>              |
| <b>Total Highway and Transit PRESERVATION / OPERATIONS</b>                   | <b>4,495.4</b>        | <b>809.8</b>                | <b>1,358.8</b>              | <b>2,326.8</b>              |



similar size and population.

## NEW AND EXPANDED SYSTEM CAPACITY PROJECTS

The cost of each new highway capacity and expansion project is derived in one of two ways; estimates from completed studies or on a cost per mile / facility type basis. Costs for projects under construction such as the I-15 Freeway CORE, Timpanogos Highway, and Geneva Road are actual programmed expenditures. Costs of projects such as the Mountain View Freeway project were taken from current estimates from completed environmental studies. Most other project costs were based on a cost per mile, facility type, and right-of-way. All projects have a 4% annual inflation rate averaged to the mid-point of the phase in which the project is to be constructed or needed. The new capacity and expansion projects costs listed are a total of the

proposed costs to construct the facilities in the transportation plan. Projects are listed in the plan in the phase they are needed. Through 2040, \$11.5B will be needed to fund the capacity expansion needs in the MPO area.

Capital project costs for transit are estimated using a standard cost per mile that is inflated into an estimated year of construction. If a project has progressed through a study or preliminary engineering that have an estimated cost for the project, that number is then used. The total cost to expand the transit system is \$4.4B.

Total costs assumed for highway and transit system expansion in the transportation plan through 2040 is \$15.9B.

| Transportation System Expansion<br>Funds in Millions to Planning Phase | Planning<br>Funds | Phase 1<br>2011-2020 | Phase 2<br>2021-2030 | Phase 3<br>2031-2040 |
|------------------------------------------------------------------------|-------------------|----------------------|----------------------|----------------------|
| <b>HIGHWAY<br/>EXPANSION PROJECTS</b>                                  |                   |                      |                      |                      |
| Freeway/Expressway Projects                                            | 8,802.9           | 2,656.9              | 2,233.2              | 3,912.8              |
| Principal Highway Projects                                             | 1,573.9           | 484.5                | 740.0                | 349.4                |
| Minor Highway Projects                                                 | 1,162.6           | 253.7                | 549.8                | 359.1                |
| <b>Total Highway Expansion Costs</b>                                   | <b>11,539.4</b>   | <b>3,395.0</b>       | <b>3,523.0</b>       | <b>4,621.3</b>       |
| <b>TRANSIT<br/>EXPANSION PROJECTS</b>                                  |                   |                      |                      |                      |
| Commuter Rail                                                          | 1,280.2           | 454.5                | 495.0                | 330.7                |
| Light Rail                                                             | 2,363.0           | 0.0                  | 0.0                  | 2,363.0              |
| Enhanced Bus or Rapid Transit                                          | 401.2             | 125.0                | 235.0                | 41.2                 |
| Bus Improvements and Other Costs                                       | 340.4             | 91.8                 | 150.4                | 98.2                 |
| <b>Total Transit Expansion Costs</b>                                   | <b>4,384.8</b>    | <b>671.3</b>         | <b>880.4</b>         | <b>2,833.1</b>       |
| <b>Total Highway and Transit<br/>EXPANSION PROJECTS</b>                | <b>15,924.2</b>   | <b>4,066.3</b>       | <b>4,403.4</b>       | <b>7,454.4</b>       |

## **HAZUS REPORT**

During the preparation of the Mountainland Pre-Disaster Hazard Mitigation Plan, staff used FEMA's HAZUS modeling software to simulate an earthquake event in Utah County. HAZUS is a GIS modeling package that uses local data to assess damages from an earthquake, hurricane or flood. With probable location and magnitude information from the University of Utah's Seismology Department, a 7.0 magnitude earthquake with the epicenter along the Wasatch Fault was modeled. A byproduct of the Model Event Report was a damage assessment of local bridges, including capacity, 7 days after the event.

## **DATA USAGE**

The damage assessment report listed each bridge on the system and its capacity. All bridges with a capacity less than 50% were considered a complete loss and the model link was broken. Bridges with a capacity above 50% were considered operational and accommodated traffic.

## **MODELING**

With the Utah County Earthquake report data, staff adapted the local bridges damage assessment to model traffic 7 days after the event. It was assumed that after one week, most of the population will be returning to normal activity, needing roads to access jobs, shopping and schools. This model run is intended to look for bottlenecks in the system that may not occur on a regular day, and for

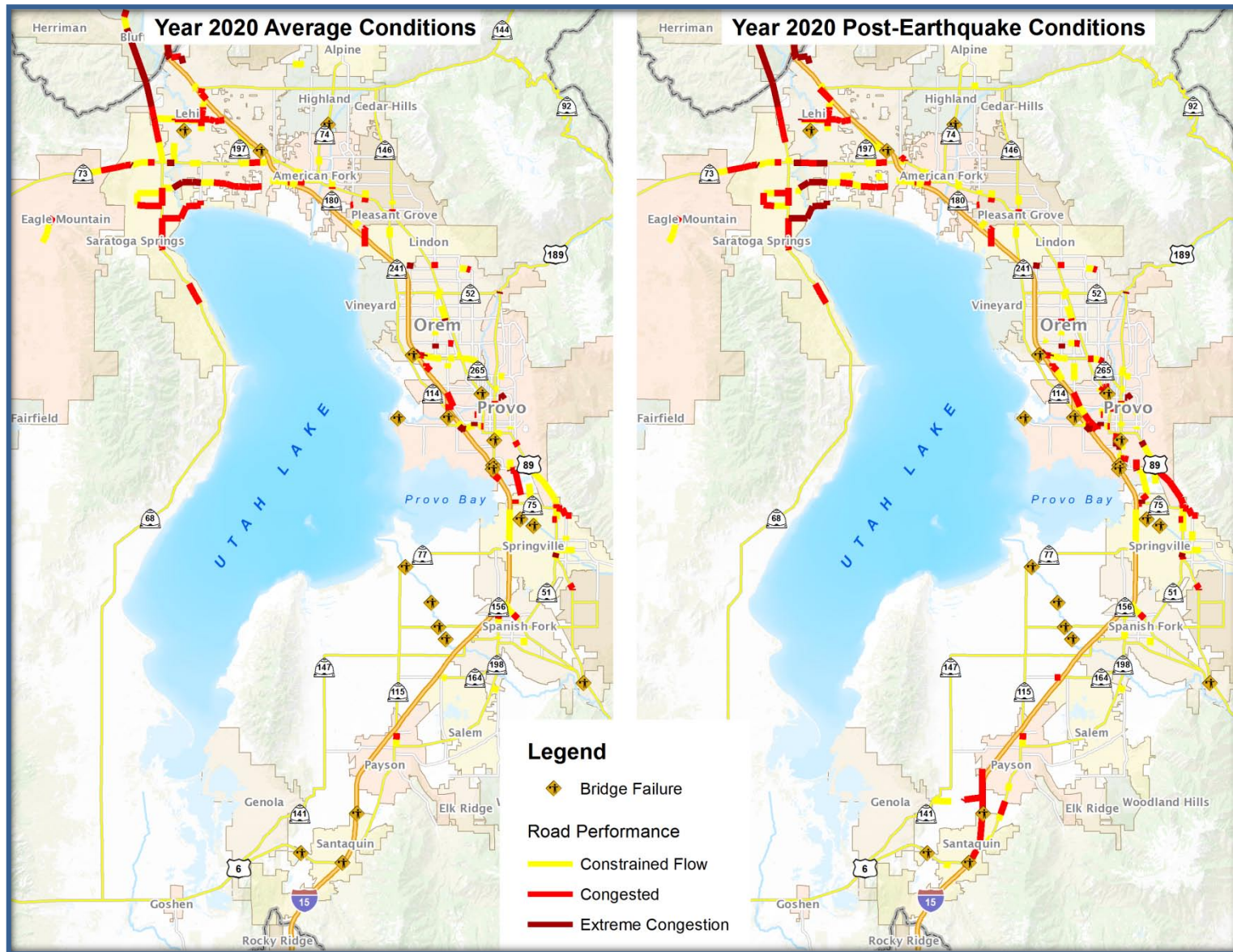
system redundancy in those areas. The following three maps show a normal day model run, a post earthquake run and comparison of a regular day run vs. post event run revealing those facilities that have additional traffic due to damaged bridges.

## **RESULTS**

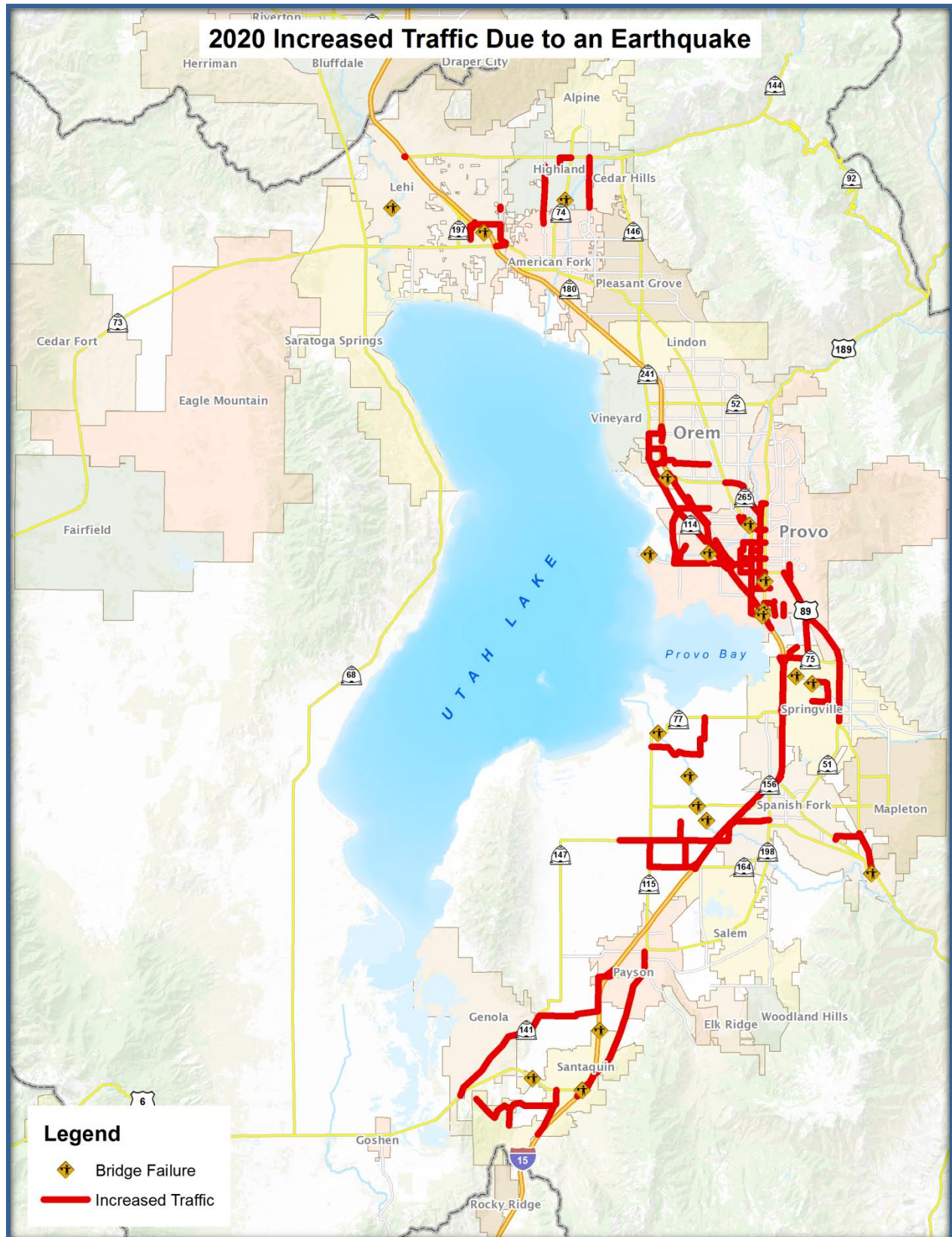
As seen on the proceeding maps, a hazard event such as an earthquake could have significant, long lasting effects on the system. There are some choke points that are created by certain bridges; however the overall system is relatively intact. Below is a list of major elements of the scenario.

- The post disaster system benefits greatly from the reconstruction of key facilities such as I-15, SR-92 and Pioneer Crossing. As all of these bridges are new, it is likely that they will continue to perform.
- Many of the bridges that are affected by the earthquake scenario are older bridges on collector roads. While they do create traffic issues, most are mitigated by nearby alternatives without creating system wide failure.
- While many of the bridges along I-15 are replaced during reconstruction, there are older bridges on the northern and southern ends of the county. Their failure can create significant congestion.

# EARTHQUAKE SCENARIO MODELING REPORT









## FREIGHT IN UTAH AND MAG

As the “Crossroads of the West” for several modes of transportation, Utah plays a major role in the movement of freight across the United States. The smooth flow of freight in Utah and across its borders is important to the current and future economy of Utah and America. The geographic area of the Mountainland Association of Governments (MAG) is an important location for roadways and railroads, but is less important for pipelines and aviation because of the lack of pipeline infrastructure and air cargo service.

Approximately 200 million tons of freight valued at \$134 billion was shipped to, from and within Utah via the various modes of transportation in 2002. The following table shows the shipments by weight and value for Utah for 2002 and projections for 2035. Unfortunately, 2002 is the latest freight information sheet by state from the Federal Highway Administration’s Office of Freight Management and Operations.

averages 23 percent on Utah highways, versus a national average of only 12 percent.

Additionally, northern Utah is the hub of western refrigerated (reefer) truck freight operations. Many large reefer truck companies maintain terminals along the Wasatch Front to take advantage of Utah’s crossroads status. Geography has also made Utah a strategic trucking hub because of its location relative to the Sierra Nevada Mountain Range in California, the Humboldt River Valley in Nevada and the Colorado River Canyons in southern Utah. Truck transportation works in conjunction with pipelines, railroads and aviation to provide efficient multimodal transportation to Utah’s shippers. The following list provides vital points about trucking and its importance to Utah.

1. In 2002, trucks carried 118 million tons of freight in Utah accounting for 59 percent of the total weight shipped.
2. In 2002, trucks carried \$95 billion of freight in Utah accounting for 71 percent of the total value shipped.

| Utah Modal Shipment by Weight (Million Tons) and by Value (Billion Dollars) |            |            |            |            |                    |            |            |            |
|-----------------------------------------------------------------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|
|                                                                             | 2002       |            |            |            | 2035 (Projections) |            |            |            |
| Mode                                                                        | Tons       | Percent    | Value      | Percent    | Tons               | Percent    | Value      | Percent    |
| Roadways                                                                    | 118        | 59         | 95         | 71         | 291                | 64         | 320        | 59         |
| Pipelines                                                                   | 52         | 26         | 14         | 10         | 79                 | 18         | 25         | 5          |
| Rail/Intermodal                                                             | 30         | 15         | 22         | 17         | 81                 | 18         | 177        | 34         |
| Aviation                                                                    | <1         | <1         | 3          | 2          | <1                 | <1         | 13         | 2          |
| <b>Total</b>                                                                | <b>200</b> | <b>100</b> | <b>134</b> | <b>100</b> | <b>391</b>         | <b>100</b> | <b>535</b> | <b>100</b> |

**Source:** U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Facts and Figures 2007. U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Info, <http://ops.fhwa.dot.gov/freight>. About two percent of the Pipeline mode also contains unknown shipments.

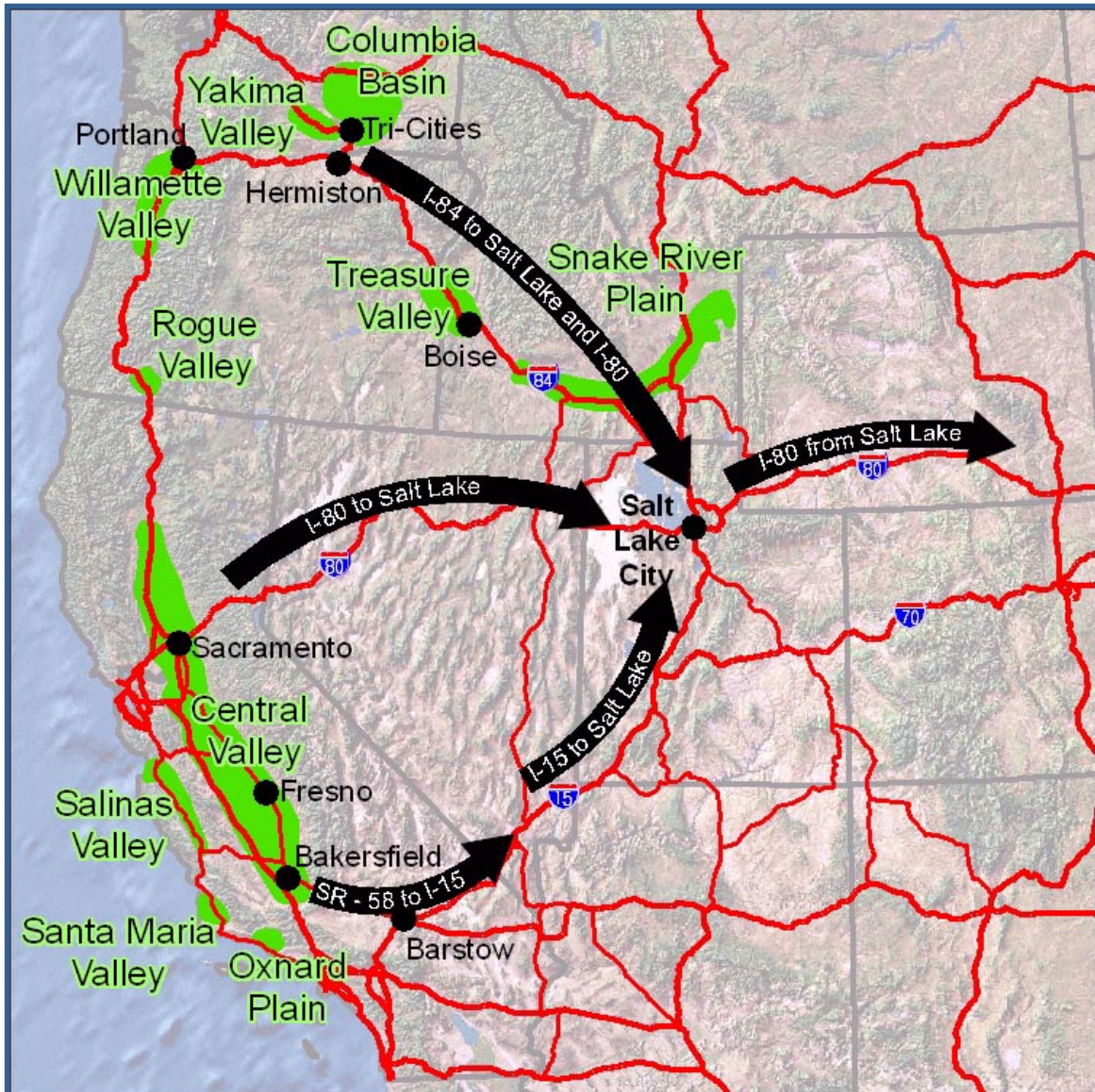
## ROADWAYS

The trucking industry is the dominant mover of freight in Utah. This is due primarily to freight traffic traveling to and from the east and west coasts on I-15, I-70, I-80 and I-84. Truck traffic

3. In 2009, the trucking industry in Utah employed more than 18,137 people with an average annual salary of \$39,984.

4. More than 80 percent of US communities depend solely on trucking for delivery of goods and commodities.
5. C.R. England is the largest refrigerated truck company in the North America and is headquartered in Salt Lake City.

The map shows large reclamation project growing areas in the west and the freight flow of refrigerated produce and frozen foods through Utah. Refrigerated freight is extremely time sensitive.



Source: Utah Department of Transportation

## PIPELINES

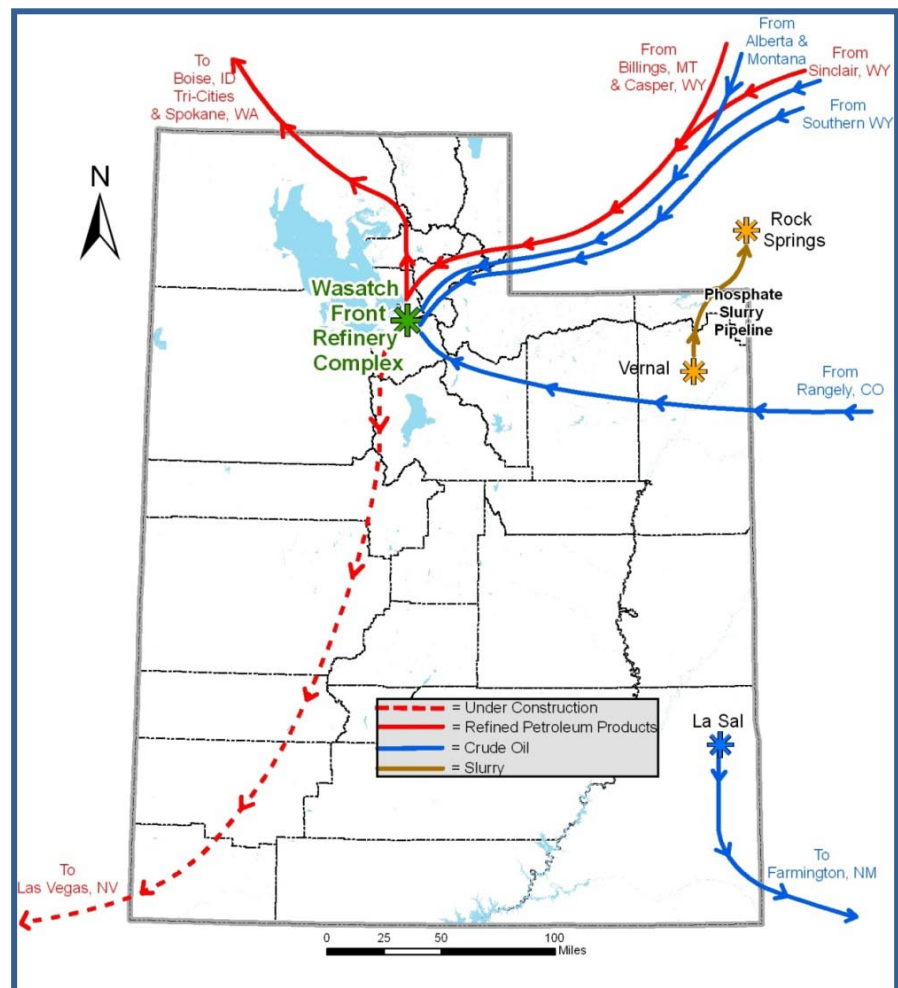
By weight, pipelines are the second largest mode of freight transportation in Utah. Pipelines deliver their products reliably, safely, efficiently and economically. In terms of potential highway impact, it is crude oil, refined petroleum products and solid material in slurry form (phosphate rock) that would be transported by trucks or trains if Utah's pipeline infrastructure was not available. The pipeline industry develops, owns, operates and maintains its own infrastructure.

Pipelines carry gasoline, diesel fuel, kerosene and jet fuel for transportation uses; heating oil, natural gas and propane for homes; fertilizer for agriculture; and crude oil, propylene, ethane, ethylene and carbon dioxide for industrial uses. The following list provides vital points about pipelines and their importance to Utah.

1. In 2002, pipelines carried 52 million tons of freight in Utah accounting for 26 percent of the total weight shipped.
2. In 2002, pipelines carried \$14 billion of freight in Utah accounting for 10 percent of the total value shipped.
3. In 2009, the pipeline industry in Utah employed approximately 300 people with an average annual salary of \$94,416.

4. In Utah, on average pipelines (excluding natural gas) transport the equivalent 2,164 truck loads each day.
5. There are 20 different pipeline operators in Utah that carry a variety of commodities.
6. More than 5,000 miles of pipelines exist in Utah.

The map shows the general pipeline system in Utah (excluding natural gas) for the movement of refined petroleum products, crude oil, and slurry.





## RAILROADS/SEAPORTS AND INTERMODAL

### RAILROADS

Since the completion of America's first transcontinental railroad at Promontory, Utah on May 10, 1869 railroads have played a major role in the transportation of freight in Utah. The railroad industry develops, owns, operates and maintains its own infrastructure.

In Utah, primary railroad terminals, known as freight yards, are found in Ogden, Salt Lake City, and Provo. Smaller secondary rail yards are located in Helper, Midvale and Milford. Six routes of the Union Pacific Railroad converge on the Wasatch Front, linking Utah with Northern and Southern California, the Pacific Northwest, as well as Midwestern and Eastern points.

Most mainline railroad infrastructure in the state of Utah is owned and operated by America's largest railroad, Union Pacific (UP). The 1996 UP takeover of Southern Pacific (SP) resulted in a near monopoly situation in railroad freight service in Utah. As a part of the UP/SP merger, the Federal Surface Transportation Board (STB) directed the west's other large railroad, Burlington Northern Santa Fe (BNSF), to provide limited freight service in Utah. The BNSF Railway owns limited rail infrastructure in Utah, primarily its two railroad freight yards in Provo and Midvale. Most BNSF operations are conducted via a trackage rights agreement over selected UP lines.

There are a modest number of smaller shortline railroads in Utah who primarily handle freight traffic to and from UP and BNSF. Utah's railroads provide specialized freight service to the state's businesses and industries handling a variety of shipments.

### SEAPORTS AND INTERMODAL

Railroads and highways link Utah with virtually every major seaport on the West Coast of the United States as well as major ports along the Atlantic Seaboard and the Gulf Coast. However, Utah's major global gateway seaports are the three primary harbors in California. Most of Utah's imports and exports are handled through the adjacent ports of Los Angeles and Long Beach in Southern California or via the Port of Oakland further north. For 2005, the value of containerized trade moving through the Ports of Los Angeles and Long Beach either exported from or imported to Utah totaled more than \$2 billion. The following table shows Utah and bordering states trade value for 2005.

| Trade Value via the Ports of Los Angeles and Long Beach in 2005<br>(Millions of Dollars) |         |         |       |
|------------------------------------------------------------------------------------------|---------|---------|-------|
| State                                                                                    | Exports | Imports | Total |
| Arizona                                                                                  | 340     | 8,610   | 8,950 |
| Colorado                                                                                 | 280     | 2,630   | 2,910 |
| Idaho                                                                                    | 20      | 830     | 850   |
| Nevada                                                                                   | 60      | 3,660   | 3,720 |
| New Mexico                                                                               | 30      | 1,880   | 1,910 |
| Utah                                                                                     | 560     | 1,460   | 2,020 |
| Wyoming                                                                                  | 10      | 320     | 330   |

Source: Trade Impact Study, 2007, Port of Los Angeles, Port of Long Beach, and Alameda Corridor Transportation Authority

Large volumes of intermodal freight passing through Utah make the state a global gateway. Intermodal freight involves the movement of cargo in a container or trailer via multiple modes of transportation such as rail, ship or truck, without handling the freight itself when changing modes. Since 1984, a new form of intermodal shipping known as double-stack rail transport has become increasingly common as millions of containers per year are shipped by rail in the United States. Seaports and highway-rail intermodal terminals are where these containers are transferred from one mode to

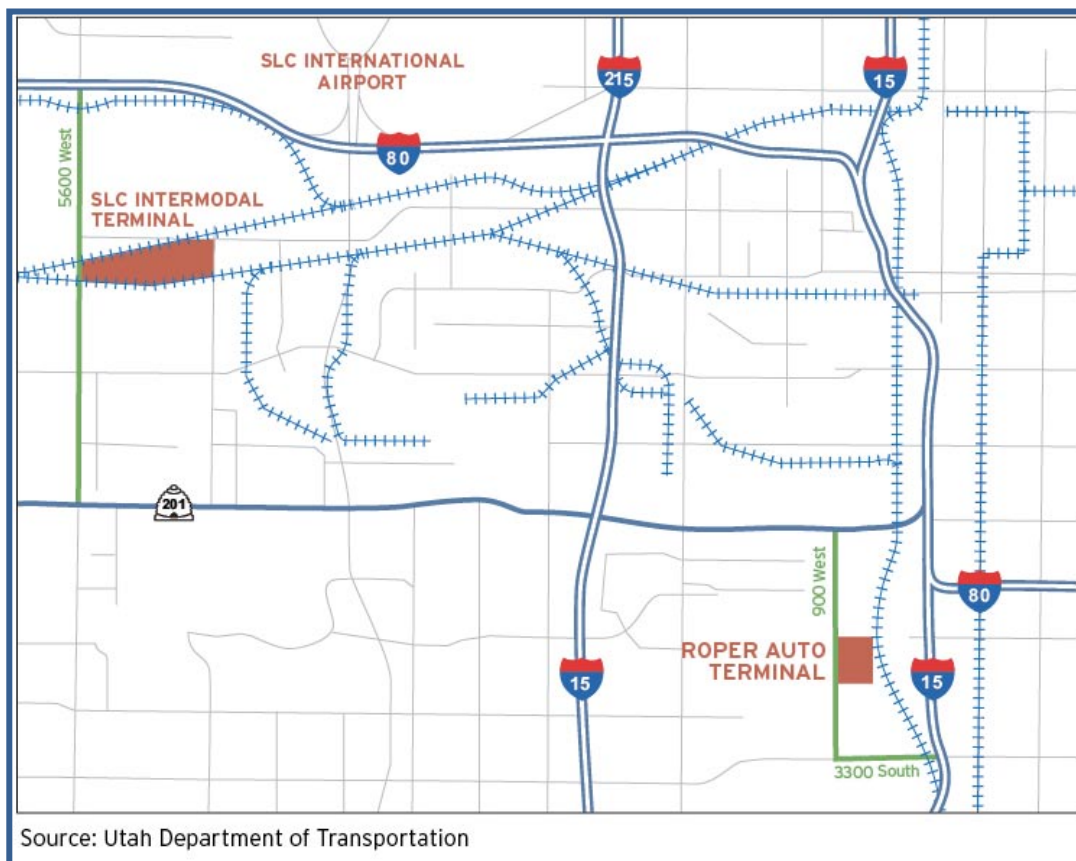
## FREIGHT IN THE MPO

another. Intermodal freight links Utah's economy with the global economy.

The new Salt Lake City Intermodal Terminal (SLCIT), owned by UP, is Utah's global gateway. SLCIT provides highway access to markets throughout Utah and surrounding states as far distant as Montana. SLCIT provides direct rail service to the Ports of Los Angeles/Long Beach in southern California, the Port of Oakland in northern California, and major Midwestern and Gulf Coast terminals in Chicago, Kansas City, St. Louis, Memphis and Houston. At SLCIT, most of the inbound freight from the west consists of manufactured goods from Asia, while most of the outbound freight is food products, animal feed and seeds. A 100-car double-stack train carrying 200 containers can be unloaded in less

than six hours at this terminal. The trailers and containers from arriving trains use the 1,100 parking stalls to await truck pickup anytime at this 24-hour facility. The highway system links Utah County with the SLCIT.

UP also operates another type of intermodal freight facility in Utah. Located at the Roper Freight Yard in South Salt Lake City, the Roper Auto Terminal handles inbound shipments of new automobiles for the entire state of Utah. At this facility, new vehicles are transferred from multi-level freight cars, called autoracks, to a large parking area where they are loaded onto auto transport trucks for delivery to regional dealerships. The Roper Auto Terminal is served by trains from southern California and the Midwest.



The following list provides vital points about railroad/intermodal and its importance to Utah.

1. In 2002, railroads/intermodal carried 30 million tons of freight in Utah accounting for 15 percent of the total weight shipped.
2. In 2002, railroad/intermodal carried \$22 billion of freight in Utah accounting for 17 percent of the total value shipped.
3. In 2009, the railroad industry in Utah employed approximately 1,687 people with an average annual salary of \$62,100.
4. Prior to the current economic recession, approximately 800 to 1,000 containers or trailers were loaded and unloaded daily at SLCIT.
5. Prior to the current economic recession, approximately 600 automobiles were handled through the Roper Auto Terminal each day, resulting in an average of 90 auto transport trucks departing the terminal every 24 hours.
6. The average freight train transports the equivalent of 171 trucks.
7. The average unit coal train transports the equivalent of 279 trucks.

## AVIATION

Air freight is the smallest component of the freight transportation system serving MAG. Air freight for the MAG area is primarily serviced by the Salt Lake International Airport.

There is no airline passenger or air cargo service in Utah County. However, the Provo Airport Master Plan has evaluated a potential for air passenger service in the future. Currently, the Salt Lake City International Airport (SLCIA) is the closest airline passenger service for those in the MAG area and is a major hub for Delta Airlines. Service is also provided by nine other scheduled airlines as well as three air freight carriers. In calendar year 2009, a combined total of

270,481,714 pounds of air mail and cargo enplaned and deplaned at the airport.

The Salt Lake City Airport has two terminals designated for air cargo. The north terminal is accessed via Interstate 215, while the south freight and mail terminal is accessed via Interstate 80. The primary users of these facilities are United Parcel Service (UPS) at the north terminal, while FedEx and the United States Postal Service (USPS) maintain operations at the south terminal. Air freight/parcel traffic to and from the airport is concentrated during the Monday to Friday work week, with far less traffic on weekends and holidays. The following list provides vital points about air cargo and its importance to Utah.

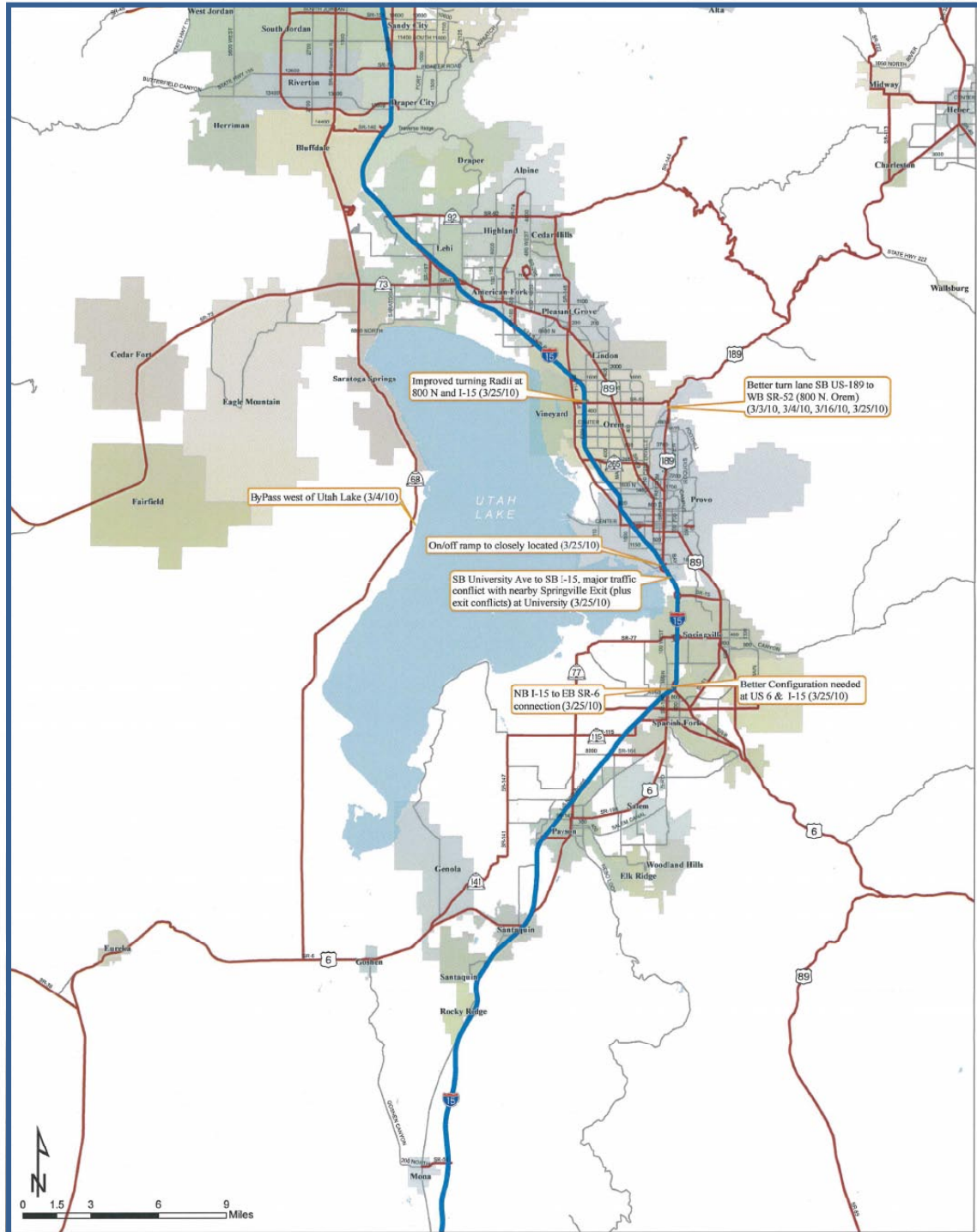
1. In 2002, air transportation carried less than one million tons of freight in Utah accounting for less than one percent of the total weight shipped.
2. In 2002, air transportation carried \$3 billion of freight in Utah accounting for two percent of the total value shipped.
3. In 2009, the air transportation industry in Utah employed approximately 6,348 people with an average annual salary of \$50,532.
4. UPS averages 30 trucks per day to and from their airport facility via Exit 25 on I-215.
5. FedEx and the United States Postal Service, together, average 110 trucks to and from the airport via Exit 115 on I-80.
6. Total daily truck traffic to and from the airport totals 140 trips each weekday.

## MAG'S FREIGHT COMMENTS MAP

The following map pinpoints areas of concern and the specific nature of those concerns as expressed by truckers, railroad executives and other interested parties. These comments should be reviewed, discussed, and considering in the development of future transportation projects.



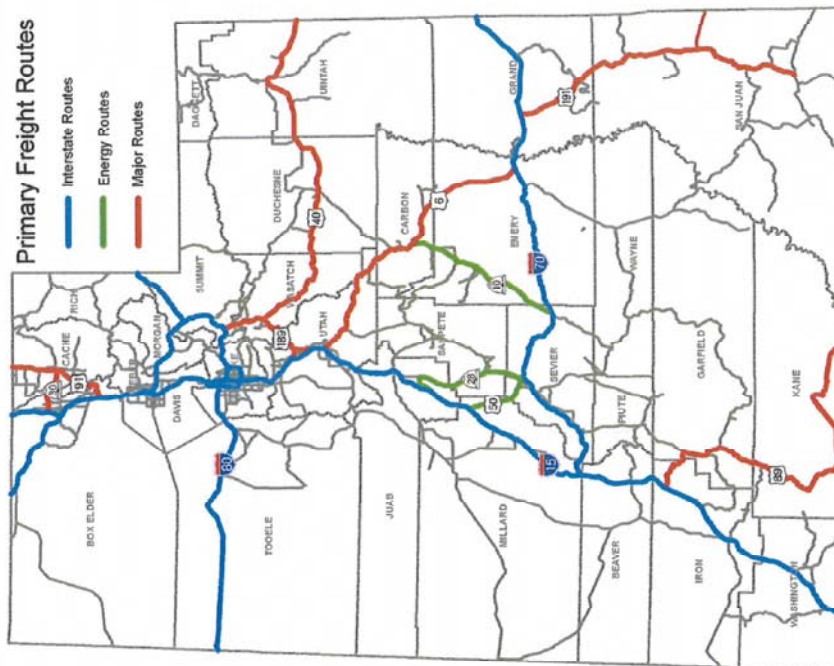
## UDOT Planning Trucking Comments (MAG)



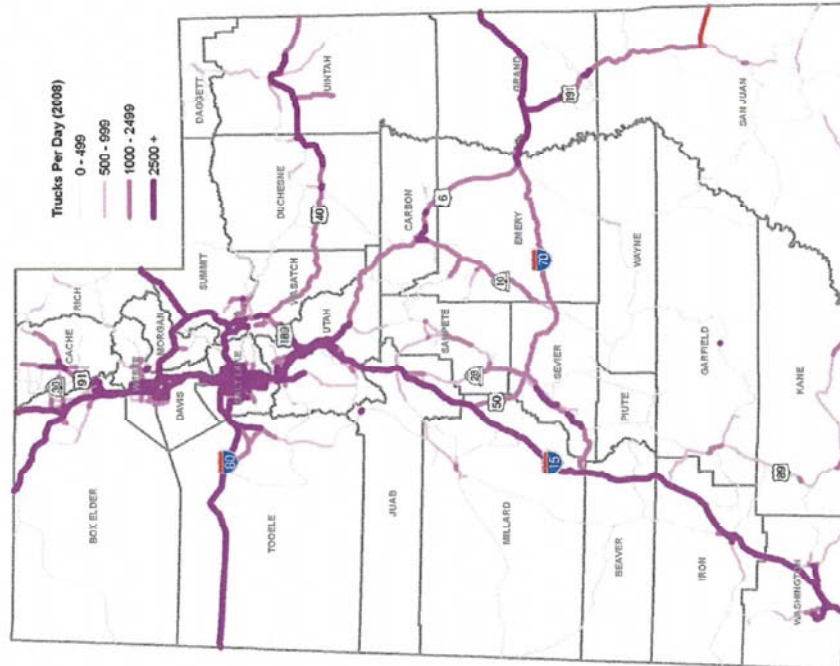
# Freight in Utah

**Utah**  
Connecting Communities  
PLANNING SECTION

## Utah's Primary Freight Routes

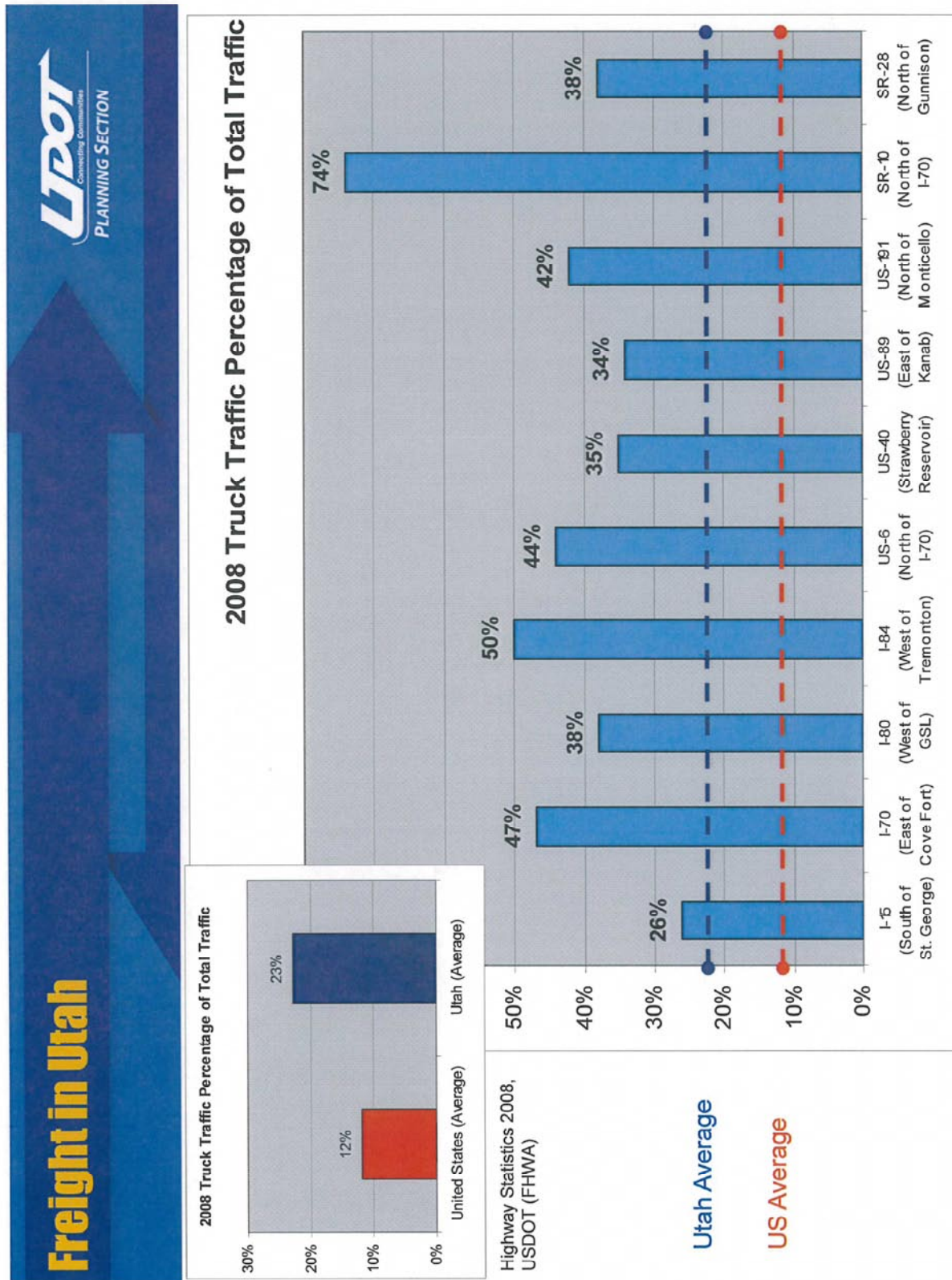


## Utah's Daily Truck Volume



UDOT Truck Traffic on Utah Highways, 2008

# FREIGHT IN THE MPO





## UTAH COUNTY TRANSEARCH REPORT

### INTRODUCTION

This report is an analysis of freight flows in and through Utah County, using the TRANSEARCH® commodity movement database. The TRANSEARCH® commodity movement database from Global Insight Inc. is a proprietary database offering county-level freight-movement data by commodity group and mode of transportation. Global Insight compiles the database annually using a combination of information from public sources and data on primary shipments obtained from major freight carriers. TRANSEARCH is generally considered the most comprehensive information source on domestic freight activity available. For this study, the Utah Department of Transportation (UDOT) with the Wasatch Front Regional Council (WFRC) and Mountainland Association of Governments (MAG) purchased the 2007 version of TRANSEARCH at the county level for the entire state of Utah. For several other high-profile counties in the United States, such as Los Angeles (CA), King (WA), Clark (NV), the data was provided at county level, but most records outside Utah are on a Business Economic Area (BEA) level of detail.

The database reports transportation movements, measured in tons, at the four-digit Standard Transportation Commodity Classification (STCC) code level. The four-digit STCC level consists of 755 commodity variations. For the purpose of reporting clarity in this document, commodities have been simplified to the more manageable 39 commodity, two-digit level.

The database classifies the commodity movements into four modes: motor carrier, rail, air, and other. This analysis focuses primarily on truck and rail freight data. The freight flows

into and out of Utah County are presented in this report.

### BACKGROUND AND SCOPE

As part of the Utah Statewide Model (USTM) planning process, a statewide freight report was created. The report examined Transearch data for the entire State of Utah, explaining freight transportation patterns and predictions. At the request of UDOT, this report was created specifically with Utah County data to mirror the statewide freight report. As with the statewide report, data for significant modes of freight transportation within the region were examined; in this case, those modes are by truck and by rail. To maintain order with the data, all tables will present the top ten categories, where available. The data are all sourced directly from Transearch, and the analysis provides a high-level overview of trends in Utah County freight transportation. This analysis may form the basis for further planning efforts in Utah County or surrounding areas.

### TRUCK IMPORTS/EXPORTS

Truck transportation represents the largest mode for freight transportation to and from Utah County. Tables 1 through 8 describe trends in imports and exports by product. These tables are paired, with the first table of each set representing the existing conditions (data from 2007) and the second table representing a projection of the future (data from 2040). Tables 9 through 16 are also presented in pairs, but instead of describing freight transportation by product, they display origins and destinations of the goods.

TABLE 1: COMMODITY BY TONNAGE, WITHIN UTAH (2007)

| 2007                           |                   |               |                                |                   |               |
|--------------------------------|-------------------|---------------|--------------------------------|-------------------|---------------|
| IMPORT                         |                   |               | EXPORT                         |                   |               |
| Nonmetallic Minerals           | 7,449,772         | 71.8%         | Nonmetallic Minerals           | 9,939,003         | 74.2%         |
| Clay, Concrete, Glass Or Stone | 1,200,391         | 11.6%         | Clay, Concrete, Glass Or Stone | 1,786,166         | 13.3%         |
| Primary Metal Products         | 804,646           | 7.8%          | Primary Metal Products         | 1,032,156         | 7.7%          |
| Secondary Traffic              | 440,467           | 4.2%          | Secondary Traffic              | 343,592           | 2.6%          |
| Coal                           | 163,301           | 1.6%          | Petroleum Or Coal Products     | 65,905            | 0.5%          |
| Petroleum Or Coal Products     | 163,286           | 1.6%          | Farm Products                  | 58,222            | 0.4%          |
| Food Or Kindred Products       | 68,179            | 0.7%          | Fabricated Metal Products      | 51,298            | 0.4%          |
| Chemicals Or Allied Products   | 25,157            | 0.2%          | Food Or Kindred Products       | 29,356            | 0.2%          |
| Lumber Or Wood Products        | 22,730            | 0.2%          | Chemicals Or Allied Products   | 23,915            | 0.2%          |
| Fabricated Metal Products      | 13,943            | 0.1%          | Lumber Or Wood Products        | 21,352            | 0.2%          |
| Other                          | 27,257            | 0.3%          | Other                          | 35,306            | 0.3%          |
| <b>Total</b>                   | <b>10,379,128</b> | <b>100.0%</b> | <b>Total</b>                   | <b>13,386,270</b> | <b>100.0%</b> |

TABLE 2: COMMODITY BY TONNAGE, WITHIN UTAH (2040)

| 2040                           |                   |               |                                |                   |               |
|--------------------------------|-------------------|---------------|--------------------------------|-------------------|---------------|
| IMPORT                         |                   |               | EXPORT                         |                   |               |
| Nonmetallic Minerals           | 14,215,434        | 77.3%         | Nonmetallic Minerals           | 19,526,731        | 82.5%         |
| Clay, Concrete, Glass Or Stone | 1,479,624         | 8.0%          | Clay, Concrete, Glass Or Stone | 1,927,530         | 8.1%          |
| Secondary Traffic              | 1,333,660         | 7.3%          | Primary Metal Products         | 950,837           | 4.0%          |
| Primary Metal Products         | 506,250           | 2.8%          | Secondary Traffic              | 844,574           | 3.6%          |
| Petroleum Or Coal Products     | 361,486           | 2.0%          | Petroleum Or Coal Products     | 222,778           | 0.9%          |
| Coal                           | 272,366           | 1.5%          | Fabricated Metal Products      | 68,544            | 0.3%          |
| Food Or Kindred Products       | 72,591            | 0.4%          | Printed Matter                 | 25,843            | 0.1%          |
| Lumber Or Wood Products        | 40,467            | 0.2%          | Farm Products                  | 25,513            | 0.1%          |
| Chemicals Or Allied Products   | 31,665            | 0.2%          | Food Or Kindred Products       | 19,905            | 0.1%          |
| Transportation Equipment       | 27,080            | 0.1%          | Chemicals Or Allied Products   | 18,556            | 0.1%          |
| Other                          | 42,571            | 0.2%          | Other                          | 44,895            | 0.2%          |
| <b>Total</b>                   | <b>18,383,193</b> | <b>100.0%</b> | <b>Total</b>                   | <b>23,675,706</b> | <b>100.0%</b> |

Tables 1 and 2 examine Utah County's role in the larger State of Utah's economy—all imports and exports in these tables occur within Utah state boundaries. Nonmetallic Minerals remains the largest import (by tonnage) from 2007 to 2040, increasing in its share of total imports from 71.8 percent to 77.3 percent. This may suggest a decreasing dependency of Utah County on imports in other categories, a supposition supported by how Secondary

Traffic<sup>1</sup> (freight traffic without a Utah County origin or destination) increases by more than double from 4.2 percent of total tonnage in 2007 to 7.3 percent in 2040.

Because Tables 1 and 2 only examine one metric of measurement—tonnage—evaluations should be conducted on the same data by monetary value, as shown in Tables 3 and 4.

<sup>1</sup> Secondary Traffic primarily refers to warehousing or finished goods movement.

**TABLE 3: COMMODITY BY VALUE, WITHIN UTAH (2007)**

| 2007                           |                        |               |                                |                        |               |
|--------------------------------|------------------------|---------------|--------------------------------|------------------------|---------------|
| IMPORT                         |                        |               | EXPORT                         |                        |               |
| Secondary Traffic              | \$3,368,065,166        | 42.0%         | Primary Metal Products         | \$3,797,644,797        | 47.9%         |
| Primary Metal Products         | \$2,925,292,820        | 36.5%         | Secondary Traffic              | \$2,471,301,285        | 31.2%         |
| Chemicals Or Allied Products   | \$1,170,684,684        | 14.6%         | Chemicals Or Allied Products   | \$910,357,921          | 11.5%         |
| Transportation Equipment       | \$126,449,970          | 1.6%          | Fabricated Metal Products      | \$243,819,269          | 3.1%          |
| Clay, Concrete, Glass Or Stone | \$125,404,355          | 1.6%          | Clay, Concrete, Glass Or Stone | \$162,022,294          | 2.0%          |
| Fabricated Metal Products      | \$58,226,797           | 0.7%          | Printed Matter                 | \$64,006,569           | 0.8%          |
| Food Or Kindred Products       | \$50,139,799           | 0.6%          | Transportation Equipment       | \$54,066,365           | 0.7%          |
| Petroleum Or Coal Products     | \$50,008,310           | 0.6%          | Nonmetallic Minerals           | \$52,511,059           | 0.7%          |
| Nonmetallic Minerals           | \$48,440,505           | 0.6%          | Petroleum Or Coal Products     | \$38,923,961           | 0.5%          |
| Printed Matter                 | \$39,937,893           | 0.5%          | Food Or Kindred Products       | \$36,236,311           | 0.5%          |
| Other                          | \$55,145,683           | 0.7%          | Other                          | \$100,270,057          | 1.3%          |
| <b>Total</b>                   | <b>\$8,017,795,982</b> | <b>100.0%</b> | <b>Total</b>                   | <b>\$7,931,159,887</b> | <b>100.0%</b> |

**TABLE 4: COMMODITY BY VALUE, WITHIN UTAH (2040)**

| 2040                           |                         |               |                                |                          |               |
|--------------------------------|-------------------------|---------------|--------------------------------|--------------------------|---------------|
| IMPORT                         |                         |               | EXPORT                         |                          |               |
| Secondary Traffic              | \$10,270,102,377        | 70.9%         | Secondary Traffic              | \$5,732,445,926          | 50.9%         |
| Primary Metal Products         | \$1,848,113,047         | 12.8%         | Primary Metal Products         | \$3,501,636,529          | 31.1%         |
| Chemicals Or Allied Products   | \$1,381,786,447         | 9.5%          | Chemicals Or Allied Products   | \$726,373,582            | 6.4%          |
| Transportation Equipment       | \$227,590,867           | 1.6%          | Fabricated Metal Products      | \$365,881,688            | 3.2%          |
| Clay, Concrete, Glass Or Stone | \$196,471,913           | 1.4%          | Clay, Concrete, Glass Or Stone | \$285,324,586            | 2.5%          |
| Petroleum Or Coal Products     | \$127,953,667           | 0.9%          | Printed Matter                 | \$199,652,310            | 1.8%          |
| Fabricated Metal Products      | \$90,140,495            | 0.6%          | Petroleum Or Coal Products     | \$127,233,001            | 1.1%          |
| Nonmetallic Minerals           | \$87,287,185            | 0.6%          | Nonmetallic Minerals           | \$107,907,326            | 1.0%          |
| Printed Matter                 | \$71,844,246            | 0.5%          | Transportation Equipment       | \$54,887,191             | 0.5%          |
| Food Or Kindred Products       | \$53,238,197            | 0.4%          | Pulp, Paper Or Allied Products | \$42,938,198             | 0.4%          |
| Other                          | \$125,641,833           | 0.9%          | Other                          | \$123,237,725            | 1.1%          |
| <b>Total</b>                   | <b>\$14,480,170,273</b> | <b>100.0%</b> | <b>Total</b>                   | <b>\$ 11,267,518,062</b> | <b>100.0%</b> |

In Tables 3 and 4, Secondary Traffic remains the largest import (in terms of value) from 2007 to 2040. The top export (Primary Metal Products) in 2007 maintains an almost exact value in 2040 while Secondary Traffic increases by over \$2 billion.

In imports, the share of Primary Metal Products drops by 23.7 percent between 2007 and 2040. In exports, the share of same product decreases, from 47.9 percent to 31.1 percent.



**TABLE 5: COMMODITY BY TONNAGE, OUTSIDE UTAH (2007)**

| 2007                           |                  |               |                                |                  |               |
|--------------------------------|------------------|---------------|--------------------------------|------------------|---------------|
| IMPORT                         |                  |               | EXPORT                         |                  |               |
| Food Or Kindred Products       | 285,442          | 19.4%         | Primary Metal Products         | 782,359          | 30.6%         |
| Secondary Traffic              | 263,732          | 17.9%         | Metallic Ores                  | 594,647          | 23.3%         |
| Clay, Concrete, Glass Or Stone | 206,520          | 14.0%         | Pulp, Paper Or Allied Products | 185,794          | 7.3%          |
| Primary Metal Products         | 188,173          | 12.8%         | Clay, Concrete, Glass Or Stone | 150,304          | 5.9%          |
| Chemicals Or Allied Products   | 122,576          | 8.3%          | Secondary Traffic              | 137,619          | 5.4%          |
| Fabricated Metal Products      | 72,462           | 4.9%          | Nonmetallic Minerals           | 133,035          | 5.2%          |
| Petroleum Or Coal Products     | 68,415           | 4.6%          | Fabricated Metal Products      | 116,859          | 4.6%          |
| Lumber Or Wood Products        | 57,234           | 3.9%          | Food Or Kindred Products       | 107,370          | 4.2%          |
| Transportation Equipment       | 43,850           | 3.0%          | Lumber Or Wood Products        | 71,885           | 2.8%          |
| Machinery                      | 29,020           | 2.0%          | Chemicals Or Allied Products   | 64,003           | 2.5%          |
| Other                          | 136,862          | 9.3%          | Other                          | 213,646          | 8.4%          |
| <b>Total</b>                   | <b>1,474,285</b> | <b>100.0%</b> | <b>Total</b>                   | <b>2,557,521</b> | <b>100.0%</b> |

**TABLE 6: COMMODITY BY TONNAGE, OUTSIDE UTAH (2040)**

| 2040                           |                  |               |                                |                  |               |
|--------------------------------|------------------|---------------|--------------------------------|------------------|---------------|
| IMPORT                         |                  |               | EXPORT                         |                  |               |
| Primary Metal Products         | 740,684          | 20.7%         | Metallic Ores                  | 1,030,623        | 27.4%         |
| Secondary Traffic              | 718,470          | 20.1%         | Primary Metal Products         | 575,095          | 15.3%         |
| Clay, Concrete, Glass Or Stone | 516,944          | 14.4%         | Pulp, Paper Or Allied Products | 392,001          | 10.4%         |
| Food Or Kindred Products       | 439,742          | 12.3%         | Secondary Traffic              | 356,148          | 9.5%          |
| Chemicals Or Allied Products   | 201,665          | 5.6%          | Clay, Concrete, Glass Or Stone | 276,565          | 7.3%          |
| Fabricated Metal Products      | 163,542          | 4.6%          | Nonmetallic Minerals           | 225,640          | 6.0%          |
| Petroleum Or Coal Products     | 141,958          | 4.0%          | Fabricated Metal Products      | 158,318          | 4.2%          |
| Electrical Equipment           | 132,707          | 3.7%          | Electrical Equipment           | 150,151          | 4.0%          |
| Transportation Equipment       | 123,600          | 3.5%          | Petroleum Or Coal Products     | 139,079          | 3.7%          |
| Lumber Or Wood Products        | 103,475          | 2.9%          | Food Or Kindred Products       | 80,545           | 2.1%          |
| Other                          | 295,288          | 8.3%          | Other                          | 381,253          | 10.1%         |
| <b>Total</b>                   | <b>3,578,074</b> | <b>100.0%</b> | <b>Total</b>                   | <b>3,765,419</b> | <b>100.0%</b> |

Tables 5 and 6 are parallel to Tables 1 and 2, respectively, but examine Utah County's role in the national freight transportation network, rather than just the Utah network. In its external role, Utah County's imports of Food or Kindred Products drop by 7.1 percent between 2007 and 2040. In 2040 the primary import of Utah County from areas outside of Utah are Primary Metal Products, an increase of almost 8 percent from 2007 to 2040.

The bulk of Utah County's exports are metallic ores and primary metal products in both 2007 and 2040. The percentage of these commodities is expected to decline 11.2 percent by 2040, from 53.9 percent to 42.7 percent.

**TABLE 7: COMMODITY BY VALUE, OUTSIDE UTAH (2007)**

| 2007                             |                        |               |                                  |                        |               |
|----------------------------------|------------------------|---------------|----------------------------------|------------------------|---------------|
| IMPORT                           |                        |               | EXPORT                           |                        |               |
| Secondary Traffic                | \$2,093,032,749        | 36.6%         | Primary Metal Products           | \$2,839,656,134        | 37.5%         |
| Primary Metal Products           | \$627,032,948          | 11.0%         | Chemicals Or Allied Products     | \$1,228,025,932        | 16.2%         |
| Chemicals Or Allied Products     | \$427,329,234          | 7.5%          | Secondary Traffic                | \$1,092,169,919        | 14.4%         |
| Transportation Equipment         | \$387,820,982          | 6.8%          | Electrical Equipment             | \$577,537,869          | 7.6%          |
| Machinery                        | \$374,466,695          | 6.5%          | Fabricated Metal Products        | \$446,760,499          | 5.9%          |
| Electrical Equipment             | \$324,310,119          | 5.7%          | Pulp, Paper Or Allied Products   | \$231,075,063          | 3.1%          |
| Food Or Kindred Products         | \$319,293,703          | 5.6%          | Instrum, Photo Equip, Optical Eq | \$189,640,443          | 2.5%          |
| Fabricated Metal Products        | \$308,060,792          | 5.4%          | Food Or Kindred Products         | \$187,240,349          | 2.5%          |
| Instrum, Photo Equip, Optical Eq | \$206,376,396          | 3.6%          | Lumber Or Wood Products          | \$181,146,898          | 2.4%          |
| Apparel Or Related Products      | \$126,638,608          | 2.2%          | Printed Matter                   | \$128,441,288          | 1.7%          |
| Other                            | \$530,898,445          | 9.3%          | Other                            | \$470,213,740          | 6.2%          |
| <b>Total</b>                     | <b>\$5,725,260,671</b> | <b>100.0%</b> | <b>Total</b>                     | <b>\$7,571,908,136</b> | <b>100.0%</b> |

**TABLE 8: COMMODITY BY VALUE, OUTSIDE UTAH (2040)**

| 2040                             |                         |               |                                  |                         |               |
|----------------------------------|-------------------------|---------------|----------------------------------|-------------------------|---------------|
| IMPORT                           |                         |               | EXPORT                           |                         |               |
| Secondary Traffic                | \$5,701,934,113         | 34.1%         | Secondary Traffic                | \$2,826,467,093         | 23.9%         |
| Electrical Equipment             | \$2,752,863,224         | 16.5%         | Electrical Equipment             | \$2,775,381,826         | 23.4%         |
| Primary Metal Products           | \$1,842,864,113         | 11.0%         | Primary Metal Products           | \$1,963,068,796         | 16.6%         |
| Machinery                        | \$1,335,766,400         | 8.0%          | Chemicals Or Allied Products     | \$968,384,819           | 8.2%          |
| Instrum, Photo Equip, Optical Eq | \$1,024,321,953         | 6.1%          | Instrum, Photo Equip, Optical Eq | \$756,364,826           | 6.4%          |
| Transportation Equipment         | \$1,015,278,799         | 6.1%          | Fabricated Metal Products        | \$642,687,231           | 5.4%          |
| Chemicals Or Allied Products     | \$724,014,981           | 4.3%          | Pulp, Paper Or Allied Products   | \$373,022,505           | 3.1%          |
| Fabricated Metal Products        | \$689,058,067           | 4.1%          | Printed Matter                   | \$353,695,005           | 3.0%          |
| Food Or Kindred Products         | \$464,514,771           | 2.8%          | Furniture Or Fixtures            | \$287,190,705           | 2.4%          |
| Clay, Concrete, Glass Or Stone   | \$194,000,917           | 1.2%          | Machinery                        | \$153,686,832           | 1.3%          |
| Other                            | \$959,357,611           | 5.7%          | Other                            | \$747,146,050           | 6.3%          |
| <b>Total</b>                     | <b>\$16,703,974,947</b> | <b>100.0%</b> | <b>Total</b>                     | <b>\$11,847,095,687</b> | <b>100.0%</b> |

As with Tables 3 and 4, Tables 7 and 8 show higher values for exports that represent a smaller share of tonnage. For example, the share of imports of Secondary Traffic by value holds a greater percentage of the total than it does in the tonnage tables (Tables 5 and 6). This reflects a high dollar export that is generally small in weight. Exports of Secondary Traffic also increase by 9.5 percent between 2007 and 2040 while rising from the third position in 2007 to first in 2040. At the same time, it only appears as a top ten export by tonnage in 2040 at 9.5 percent (Table 6).

## FREIGHT IN THE MPO

As stated previously, Tables 9 through 16 presented tonnage and commodity values by origins and destinations of the goods. The

origins are shown traveling “To Utah County” and destinations travel “From Utah County” in the following tables.

**TABLE 9: ORIGINS/DESTINATIONS WITHIN UTAH, BY TONNAGE (2007)**

| 2007                 |                   |               |                      |                   |               |
|----------------------|-------------------|---------------|----------------------|-------------------|---------------|
| TO UTAH COUNTY       |                   |               | FROM UTAH COUNTY     |                   |               |
| Utah County, UT      | 6,326,060         | 60.9%         | Utah County, UT      | 6,326,060         | 47.3%         |
| Salt Lake County, UT | 2,738,670         | 26.4%         | Salt Lake County, UT | 3,157,899         | 23.6%         |
| Summit County, UT    | 440,248           | 4.2%          | Millard County, UT   | 1,157,504         | 8.6%          |
| Box Elder County, UT | 284,193           | 2.7%          | Sevier County, UT    | 576,294           | 4.3%          |
| Weber County, UT     | 134,412           | 1.3%          | Emery County, UT     | 443,344           | 3.3%          |
| Emery County, UT     | 90,552            | 0.9%          | Davis County, UT     | 374,702           | 2.8%          |
| Davis County, UT     | 86,582            | 0.8%          | Box Elder County, UT | 263,509           | 2.0%          |
| Carbon County, UT    | 75,355            | 0.7%          | Juab County, UT      | 178,651           | 1.3%          |
| Sevier County, UT    | 71,348            | 0.7%          | Duchesne County, UT  | 151,505           | 1.1%          |
| Millard County, UT   | 32,277            | 0.3%          | Wasatch County, UT   | 127,757           | 1.0%          |
| Other                | 99,432            | 1.0%          | Other                | 629,045           | 4.7%          |
| <b>Total</b>         | <b>10,379,128</b> | <b>100.0%</b> | <b>Total</b>         | <b>13,386,270</b> | <b>100.0%</b> |

**TABLE 10: ORIGINS/DESTINATIONS WITHIN UTAH, BY TONNAGE (2040)**

| 2040                 |                   |               |                      |                   |               |
|----------------------|-------------------|---------------|----------------------|-------------------|---------------|
| TO UTAH COUNTY       |                   |               | FROM UTAH COUNTY     |                   |               |
| Utah County, UT      | 13,990,765        | 76.1%         | Utah County, UT      | 13,990,765        | 59.1%         |
| Salt Lake County, UT | 1,837,372         | 10.0%         | Salt Lake County, UT | 2,074,383         | 8.8%          |
| Summit County, UT    | 572,041           | 3.1%          | Emery County, UT     | 1,707,389         | 7.2%          |
| Weber County, UT     | 495,692           | 2.7%          | Millard County, UT   | 1,096,739         | 4.6%          |
| Davis County, UT     | 468,363           | 2.5%          | Sevier County, UT    | 826,982           | 3.5%          |
| Box Elder County, UT | 287,882           | 1.6%          | Juab County, UT      | 698,630           | 3.0%          |
| Sanpete County, UT   | 188,927           | 1.0%          | Duchesne County, UT  | 487,741           | 2.1%          |
| Carbon County, UT    | 175,364           | 1.0%          | Box Elder County, UT | 465,605           | 2.0%          |
| Emery County, UT     | 108,885           | 0.6%          | Davis County, UT     | 394,482           | 1.7%          |
| Sevier County, UT    | 76,987            | 0.4%          | Wayne County, UT     | 376,537           | 1.6%          |
| Other                | 180,915           | 1.0%          | Other                | 1,556,454         | 6.6%          |
| <b>Total</b>         | <b>18,383,193</b> | <b>100.0%</b> | <b>Total</b>         | <b>23,675,706</b> | <b>100.0%</b> |

Perhaps most notable in Tables 9 and 10 is that the absolute value and share of freight tonnage to and from Salt Lake County decreases from 2007 to 2040. The decrease of traffic with Salt

Lake County is offset by increased flow to and from other markets and the internal movements of Utah County.

**TABLE 11: ORIGINS/DESTINATIONS WITHIN UTAH, BY VALUE (2007)**

| 2007                 |                        |               |                       |                        |               |
|----------------------|------------------------|---------------|-----------------------|------------------------|---------------|
| TO UTAH COUNTY       |                        |               | FROM UTAH COUNTY      |                        |               |
| Salt Lake County, UT | \$3,110,708,924        | 38.8%         | Salt Lake County, UT  | \$2,842,134,340        | 35.8%         |
| Utah County, UT      | \$2,140,869,505        | 26.7%         | Utah County, UT       | \$2,140,869,505        | 27.0%         |
| Box Elder County, UT | \$1,102,182,938        | 13.7%         | Box Elder County, UT  | \$1,040,691,921        | 13.1%         |
| Weber County, UT     | \$875,502,756          | 10.9%         | Weber County, UT      | \$536,980,589          | 6.8%          |
| Iron County, UT      | \$427,138,747          | 5.3%          | Davis County, UT      | \$456,189,630          | 5.8%          |
| Davis County, UT     | \$187,451,636          | 2.3%          | Rich County, UT       | \$178,216,519          | 2.2%          |
| Cache County, UT     | \$107,547,456          | 1.3%          | Washington County, UT | \$152,763,671          | 1.9%          |
| Summit County, UT    | \$16,073,369           | 0.2%          | Cache County, UT      | \$142,531,898          | 1.8%          |
| Tooele County, UT    | \$10,302,392           | 0.1%          | Sanpete County, UT    | \$93,820,630           | 1.2%          |
| Sevier County, UT    | \$6,817,260            | 0.1%          | Tooele County, UT     | \$70,227,563           | 0.9%          |
| Other                | \$33,201,001           | 0.4%          | Other                 | \$276,733,621          | 3.5%          |
| <b>Total</b>         | <b>\$8,017,795,982</b> | <b>100.0%</b> | <b>Total</b>          | <b>\$7,931,159,887</b> | <b>100.0%</b> |

**TABLE 12: ORIGINS/DESTINATIONS WITHIN UTAH, BY VALUE (2040)**

| 2040                 |                         |               |                       |                         |               |
|----------------------|-------------------------|---------------|-----------------------|-------------------------|---------------|
| TO UTAH COUNTY       |                         |               | FROM UTAH COUNTY      |                         |               |
| Salt Lake County, UT | \$5,874,308,273         | 40.6%         | Salt Lake County, UT  | \$3,853,417,037         | 34.2%         |
| Weber County, UT     | \$3,626,020,985         | 25.0%         | Utah County, UT       | \$2,082,383,850         | 18.5%         |
| Utah County, UT      | \$2,082,383,850         | 14.4%         | Box Elder County, UT  | \$1,826,395,343         | 16.2%         |
| Box Elder County, UT | \$1,780,680,010         | 12.3%         | Weber County, UT      | \$1,025,508,481         | 9.1%          |
| Iron County, UT      | \$368,813,806           | 2.5%          | Davis County, UT      | \$849,983,118           | 7.5%          |
| Davis County, UT     | \$331,653,202           | 2.3%          | Sanpete County, UT    | \$338,263,313           | 3.0%          |
| Cache County, UT     | \$267,848,089           | 1.8%          | Morgan County, UT     | \$219,611,772           | 1.9%          |
| Sanpete County, UT   | \$47,768,046            | 0.3%          | Cache County, UT      | \$198,753,029           | 1.8%          |
| Tooele County, UT    | \$20,622,915            | 0.1%          | Rich County, UT       | \$176,687,086           | 1.6%          |
| Summit County, UT    | \$17,649,799            | 0.1%          | Washington County, UT | \$144,635,658           | 1.3%          |
| Other                | \$62,421,297            | 0.4%          | Other                 | \$551,879,375           | 4.9%          |
| <b>Total</b>         | <b>\$14,480,170,273</b> | <b>100.0%</b> | <b>Total</b>          | <b>\$11,267,518,062</b> | <b>100.0%</b> |

Despite Salt Lake County decreasing in tonnage and share from 2007 to 2040 in exports and imports (Table 10), Salt Lake County maintains its position as the primary importer to and receiver of exports from Utah County in terms of value (Tables 11 and 12). From this analysis,

the commodity flows from and to Salt Lake County can be assumed to be high value/lower weight items. This also implies that the increased volume from Utah County in tons is a lower value commodity, such as Nonmetallic Materials.



**TABLE 13: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY TONNAGE (2007)**

| 2007                   |                  |               |                        |                  |               |
|------------------------|------------------|---------------|------------------------|------------------|---------------|
| TO UTAH COUNTY         |                  |               | FROM UTAH COUNTY       |                  |               |
| Los Angeles County, CA | 97,248           | 6.6%          | Mexico                 | 617,809          | 24.2%         |
| San Francisco, CA      | 83,004           | 5.6%          | Reno, NV               | 388,318          | 15.2%         |
| Los Angeles, CA        | 78,002           | 5.3%          | Casper, WY             | 266,755          | 10.4%         |
| Maricopa County, AZ    | 65,800           | 4.5%          | Canada                 | 129,801          | 5.1%          |
| Clark County, NV       | 51,721           | 3.5%          | San Francisco, CA      | 117,888          | 4.6%          |
| Spokane, WA            | 44,934           | 3.0%          | Los Angeles County, CA | 103,067          | 4.0%          |
| Denver, CO             | 40,176           | 2.7%          | Clark County, NV       | 99,295           | 3.9%          |
| Reno, NV               | 40,166           | 2.7%          | Denver, CO             | 70,267           | 2.7%          |
| Billings, MT           | 39,963           | 2.7%          | Billings, MT           | 57,169           | 2.2%          |
| Ada County, ID         | 38,533           | 2.6%          | Los Angeles, CA        | 51,309           | 2.0%          |
| Other                  | 894,739          | 60.7%         | Other                  | 655,842          | 25.6%         |
| <b>Total</b>           | <b>1,474,285</b> | <b>100.0%</b> | <b>Total</b>           | <b>2,557,521</b> | <b>100.0%</b> |

**TABLE 14: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY TONNAGE (2040)**

| 2040                   |                  |               |                        |                  |               |
|------------------------|------------------|---------------|------------------------|------------------|---------------|
| TO UTAH COUNTY         |                  |               | FROM UTAH COUNTY       |                  |               |
| Casper, WY             | 339,549          | 9.5%          | Mexico                 | 1,112,259        | 29.5%         |
| Ada County, ID         | 255,952          | 7.2%          | Casper, WY             | 478,624          | 12.7%         |
| Los Angeles, CA        | 194,408          | 5.4%          | Canada                 | 350,518          | 9.3%          |
| San Francisco, CA      | 192,744          | 5.4%          | Reno, NV               | 298,880          | 7.9%          |
| Denver, CO             | 174,132          | 4.9%          | Denver, CO             | 152,325          | 4.0%          |
| Los Angeles County, CA | 172,435          | 4.8%          | San Francisco, CA      | 116,468          | 3.1%          |
| Billings, MT           | 154,374          | 4.3%          | Los Angeles County, CA | 94,106           | 2.5%          |
| Boise City, ID         | 121,525          | 3.4%          | Minneapolis, MN        | 90,991           | 2.4%          |
| Clark County, NV       | 114,653          | 3.2%          | Billings, MT           | 84,632           | 2.2%          |
| Spokane, WA            | 112,301          | 3.1%          | Clark County, NV       | 82,194           | 2.2%          |
| Other                  | 1,746,001        | 48.8%         | Other                  | 904,422          | 24.0%         |
| <b>Total</b>           | <b>3,578,074</b> | <b>100.0%</b> | <b>Total</b>           | <b>3,765,419</b> | <b>100.0%</b> |

From Tables 13 and 14, the tonnage of goods imported from Casper, Wyoming is expected to increase substantially from 2007 to 2040, to a 9.5 percent share of total imports.. Casper is not even listed in the top 10 in 2007 (likely being grouped in the “Other” designation) and rises to the number one import in 2040.

Also of note, Table 14 shows that the primary destination of Utah County’s exports, by share,

will be Mexico, making Utah County a significant international exporter. Canada, Los Angeles County and San Francisco are among the major export destinations for Utah County and both areas of California contain major international ports. While many of Utah County’s exports are headed southwest, its imports come from the north: locations in Idaho and Wyoming hold the top two spots in 2040 (Table 14).

**TABLE 15: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY VALUE (2007)**

| 2007                   |                        |               |                        |                        |               |
|------------------------|------------------------|---------------|------------------------|------------------------|---------------|
| TO UTAH COUNTY         |                        |               | FROM UTAH COUNTY       |                        |               |
| Los Angeles County, CA | \$446,500,157          | 7.8%          | Reno, NV               | \$1,412,431,081        | 18.7%         |
| Los Angeles, CA        | \$263,601,006          | 4.6%          | Los Angeles County, CA | \$477,834,178          | 6.3%          |
| Spokane, WA            | \$216,299,394          | 3.8%          | San Francisco, CA      | \$375,815,734          | 5.0%          |
| San Francisco, CA      | \$206,977,177          | 3.6%          | Denver, CO             | \$375,594,513          | 5.0%          |
| Maricopa County, AZ    | \$196,995,053          | 3.4%          | Clark County, NV       | \$367,401,722          | 4.9%          |
| New York, NY           | \$190,466,867          | 3.3%          | Minneapolis, MN        | \$334,676,247          | 4.4%          |
| Billings, MT           | \$172,971,442          | 3.0%          | Los Angeles, CA        | \$266,221,695          | 3.5%          |
| Ada County, ID         | \$151,222,158          | 2.6%          | Ada County, ID         | \$264,033,972          | 3.5%          |
| Chicago, IL            | \$134,773,031          | 2.4%          | Casper, WY             | \$228,525,683          | 3.0%          |
| Reno, NV               | \$124,036,878          | 2.2%          | Las Vegas, NV          | \$210,237,387          | 2.8%          |
| Other                  | \$3,621,417,510        | 63.3%         | Other                  | \$3,259,135,925        | 43.0%         |
| <b>Total</b>           | <b>\$5,725,260,671</b> | <b>100.0%</b> | <b>Total</b>           | <b>\$7,571,908,136</b> | <b>100.0%</b> |

**TABLE 16: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY VALUE (2040)**

| 2040                   |                         |               |                        |                         |               |
|------------------------|-------------------------|---------------|------------------------|-------------------------|---------------|
| TO UTAH COUNTY         |                         |               | FROM UTAH COUNTY       |                         |               |
| Los Angeles, CA        | \$1,545,509,968         | 9.3%          | Minneapolis, MN        | \$1,588,879,670         | 13.4%         |
| Los Angeles County, CA | \$1,298,066,499         | 7.8%          | Reno, NV               | \$1,100,466,809         | 9.3%          |
| Casper, WY             | \$1,014,364,810         | 6.1%          | Denver, CO             | \$872,844,309           | 7.4%          |
| Ada County, ID         | \$836,738,058           | 5.0%          | Ada County, ID         | \$540,784,520           | 4.6%          |
| Billings, MT           | \$733,882,850           | 4.4%          | Los Angeles County, CA | \$487,330,322           | 4.1%          |
| Spokane, WA            | \$655,098,733           | 3.9%          | Casper, WY             | \$449,085,473           | 3.8%          |
| San Francisco, CA      | \$634,243,762           | 3.8%          | Chicago, IL            | \$429,405,612           | 3.6%          |
| Portland, OR           | \$434,124,127           | 2.6%          | Oklahoma City, OK      | \$407,236,865           | 3.4%          |
| Washington, DC         | \$380,984,211           | 2.3%          | San Francisco, CA      | \$400,803,602           | 3.4%          |
| Staunton, VA           | \$371,066,075           | 2.2%          | Los Angeles, CA        | \$372,830,300           | 3.1%          |
| Other                  | \$8,799,895,854         | 52.7%         | Other                  | \$5,197,428,204         | 43.9%         |
| <b>Total</b>           | <b>\$16,703,974,947</b> | <b>100.0%</b> | <b>Total</b>           | <b>\$11,847,095,687</b> | <b>100.0%</b> |

In exports, Tables 15 and 16 show that Utah County's products find value in major US cities. For example, Minneapolis, MN, which holds the sixth position in 2007, reaches the top spot in 2040 by increasing received Utah exports by

\$1.25 billion in value and 9.0 percent by share. Indeed, in terms of truck freight, Utah County will grow more connected with the rest of the state, nation, and continent from 2007 to 2040.

**RAIL IMPORTS/EXPORTS**

Truck transportation represents the largest mode for freight transportation to and from Utah County. However, rail transportation is another mode that plays a role in Utah County's freight transportation network. Tables 17 through 20 describe freight rail trends in imports and exports by product and by origins

and destinations. These tables are paired, with the first table of each set representing the existing conditions (data from 2007) and the second table representing a projection of the future (data projected to 2040). Because freight rail data by value are unavailable, these tables only show freight by tonnage.

**TABLE 17: COMMODITY BY TONNAGE, WITHIN UTAH (2007)**

| 2007         |          |                          |                  |               |
|--------------|----------|--------------------------|------------------|---------------|
| IMPORT       |          | EXPORT                   |                  |               |
|              |          | Coal                     | 9,316,698        | 99.4%         |
|              |          | Waste Or Scrap Materials | 55,128           | 0.6%          |
| <b>Total</b> | <b>0</b> | <b>-</b>                 | <b>9,371,826</b> | <b>100.0%</b> |

**TABLE 18: COMMODITY BY TONNAGE, WITHIN UTAH (2040)**

| 2040         |          |                          |                  |               |
|--------------|----------|--------------------------|------------------|---------------|
| IMPORT       |          | EXPORT                   |                  |               |
|              |          | Coal                     | 3,673,682        | 99.2%         |
|              |          | Waste Or Scrap Materials | 30,140           | 0.8%          |
| <b>Total</b> | <b>0</b> | <b>-</b>                 | <b>3,703,822</b> | <b>100.0%</b> |

As noted above, freight rail traffic is smaller than truck freight traffic in Utah County. Furthermore, Tables 17 and 18 show that traffic to be relatively stable; while total tonnage and shares of exports change, all commodity categories keep their relative rankings. There are no values listed under imports suggesting that no freight comes into Utah County from

other locations in Utah by rail. Rail usage in general involves goods that are low in unit value, large commodity, and not time sensitive. It should be noted that the 2040 total value is almost 1/3 that of 2007, showing that rail freight is declining in popularity and perhaps feasibility.

**TABLE 19: COMMODITY BY TONNAGE, OUTSIDE UTAH (2007)**

| 2007                           |                  |               |                                |                |               |
|--------------------------------|------------------|---------------|--------------------------------|----------------|---------------|
| IMPORT                         |                  |               | EXPORT                         |                |               |
| Primary Metal Products         | 373,678          | 31.9%         | Coal                           | 746,860        | 83.9%         |
| Clay, Concrete, Glass Or Stone | 256,720          | 21.9%         | Waste Or Scrap Materials       | 72,768         | 8.2%          |
| Pulp, Paper Or Allied Products | 177,120          | 15.1%         | Clay, Concrete, Glass Or Stone | 36,192         | 4.1%          |
| Lumber Or Wood Products        | 134,640          | 11.5%         | Crude Petroleum or Natural Gas | 13,512         | 1.5%          |
| Chemicals Or Allied Products   | 100,184          | 8.5%          | Transportation Equipment       | 13,400         | 1.5%          |
| Petroleum Or Coal Products     | 52,240           | 4.5%          | Primary Metal Products         | 7,520          | 0.8%          |
| Food Or Kindred Products       | 47,760           | 4.1%          |                                |                |               |
| Coal                           | 21,960           | 1.9%          |                                |                |               |
| Metallic Ores                  | 7,840            | 0.7%          |                                |                |               |
| <b>Total</b>                   | <b>1,172,142</b> | <b>100.0%</b> | <b>Total</b>                   | <b>890,252</b> | <b>100.0%</b> |

**TABLE 20: COMMODITY BY TONNAGE, OUTSIDE UTAH (2040)**

| 2040                           |                |               |                                |                  |               |
|--------------------------------|----------------|---------------|--------------------------------|------------------|---------------|
| IMPORT                         |                |               | EXPORT                         |                  |               |
| Primary Metal Products         | 205,369        | 27.3%         | Coal                           | 975,101          | 81.2%         |
| Pulp, Paper Or Allied Products | 167,834        | 22.3%         | Crude Petroleum or Natural Gas | 90,179           | 7.5%          |
| Clay, Concrete, Glass Or Stone | 125,536        | 16.7%         | Waste Or Scrap Materials       | 87,953           | 7.3%          |
| Lumber Or Wood Products        | 111,153        | 14.8%         | Clay, Concrete, Glass Or Stone | 25,243           | 2.1%          |
| Chemicals Or Allied Products   | 61,365         | 8.1%          | Transportation Equipment       | 17,242           | 1.4%          |
| Food Or Kindred Products       | 43,326         | 5.8%          | Primary Metal Products         | 5,624            | 0.5%          |
| Petroleum Or Coal Products     | 25,456         | 3.4%          |                                |                  |               |
| Coal                           | 7,379          | 1.0%          |                                |                  |               |
| Metallic Ores                  | 5,969          | 0.8%          |                                |                  |               |
| <b>Total</b>                   | <b>753,389</b> | <b>100.0%</b> | <b>Total</b>                   | <b>1,201,342</b> | <b>100.0%</b> |

Tables 19 and 20 again show that traffic to be relatively stable with commodities coming and going outside of the state of Utah. In this case exports continue to grow from 890,252 tons in 2007 to 1,201,342 tons in 2040 while imports decreased by 418,753 tons. For exports, it

should be noted that Crude Petroleum or Natural Gas increased from a share of 1.5 percent in 2007 to 7.5 percent in 2040, but exports are still dominated by Coal.



**TABLE 21: ORIGINS/DESTINATIONS WITHIN UTAH, BY TONNAGE (2007)**

| 2007           |          |          |                      |                  |               |
|----------------|----------|----------|----------------------|------------------|---------------|
| TO UTAH COUNTY |          |          | FROM UTAH COUNTY     |                  |               |
|                |          |          | Millard County, UT   | 9,316,698        | 99.4%         |
|                |          |          | Box Elder County, UT | 55,128           | 0.6%          |
| <b>Total</b>   | <b>0</b> | <b>-</b> | <b>Total</b>         | <b>9,371,826</b> | <b>100.0%</b> |

**TABLE 22: ORIGINS/DESTINATIONS WITHIN UTAH, BY TONNAGE (2040)**

| 2040                                                   |          |          |                      |                  |               |
|--------------------------------------------------------|----------|----------|----------------------|------------------|---------------|
| ORIGINS/DESTINATIONS BY TONNAGE IN UTAH BY RAIL (2040) |          |          |                      |                  |               |
| TO UTAH COUNTY                                         |          |          | FROM UTAH COUNTY     |                  |               |
|                                                        |          |          | Millard County, UT   | 3,673,682        | 99.2%         |
|                                                        |          |          | Box Elder County, UT | 30,140           | 0.8%          |
| <b>Total</b>                                           | <b>0</b> | <b>-</b> | <b>Total</b>         | <b>3,703,822</b> | <b>100.0%</b> |

Tables 21 and 22 closely parallel Tables 17 and 18 and it can be assumed that just by comparing the values that the entire Coal

product is being exported to Millard County and decreases between 2007 and 2040.

**TABLE 23: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY TONNAGE (2007)**

| 2007                 |                  |               |                   |                |               |
|----------------------|------------------|---------------|-------------------|----------------|---------------|
| TO UTAH COUNTY       |                  |               | FROM UTAH COUNTY  |                |               |
| Denver, CO           | 261,960          | 22.3%         | Clark County, NV  | 746,860        | 83.9%         |
| Portland, OR         | 156,800          | 13.4%         | Dallas, TX        | 36,192         | 4.1%          |
| Spokane, WA          | 64,800           | 5.5%          | Chicago, IL       | 31,320         | 3.5%          |
| Western Oklahoma, OK | 63,784           | 5.4%          | Portland, OR      | 26,480         | 3.0%          |
| Los Angeles, CA      | 62,048           | 5.3%          | San Francisco, CA | 24,688         | 2.8%          |
| Birmingham, AL       | 58,080           | 5.0%          | Tulsa, OK         | 13,512         | 1.5%          |
| Non-CMA AB           | 56,560           | 4.8%          | St. Louis, MO     | 7,520          | 0.8%          |
| Indianapolis, IN     | 36,320           | 3.1%          | Kansas City, MO   | 3,680          | 0.4%          |
| Multnomah County, OR | 36,320           | 3.1%          |                   |                |               |
| Kansas City, MO      | 24,400           | 2.1%          |                   |                |               |
| Other                | 351,070          | 30.0%         |                   |                |               |
| <b>Total</b>         | <b>1,172,142</b> | <b>100.0%</b> | <b>Total</b>      | <b>890,252</b> | <b>100.0%</b> |

**TABLE 24: ORIGINS/DESTINATIONS OUTSIDE UTAH, BY TONNAGE (2040)**

| 2040                 |                |               |                   |                  |               |
|----------------------|----------------|---------------|-------------------|------------------|---------------|
| TO UTAH COUNTY       |                |               | FROM UTAH COUNTY  |                  |               |
| Portland, OR         | 150,270        | 19.9%         | Clark County, NV  | 975,101          | 81.2%         |
| Denver, CO           | 123,226        | 16.4%         | Tulsa, OK         | 90,179           | 7.5%          |
| Non-CMA AB           | 57,420         | 7.6%          | San Francisco, CA | 40,449           | 3.4%          |
| Spokane, WA          | 42,481         | 5.6%          | Portland, OR      | 32,761           | 2.7%          |
| Western Oklahoma, OK | 31,106         | 4.1%          | Chicago, IL       | 27,250           | 2.3%          |
| Non-CMA BC           | 27,214         | 3.6%          | Dallas, TX        | 25,243           | 2.1%          |
| Multnomah County, OR | 27,165         | 3.6%          | St. Louis, MO     | 5,624            | 0.5%          |
| Los Angeles, CA      | 26,945         | 3.6%          | Kansas City, MO   | 4,735            | 0.4%          |
| Houston, TX          | 22,396         | 3.0%          |                   |                  |               |
| Richmond, VA         | 19,358         | 2.6%          |                   |                  |               |
| Other                | 225,808        | 30.0%         |                   |                  |               |
| <b>Total</b>         | <b>753,389</b> | <b>100.0%</b> | <b>Total</b>      | <b>1,201,342</b> | <b>100.0%</b> |

As in Tables 19 and 20, Tables 23 and 24 show an overall decrease in rail imports and an overall increase in exports. The imports and

exports remain tied to the same primary origins and destinations.

## CONCLUSIONS

From the Transearch data, Utah County appears to be the site of increasing secondary traffic by 2040 and that its truck ties to larger metropolitan areas will also increase. Changes in commodity shares, volume of freight, and the

value of freight are primarily in the truck mode. The rail network appears to remain relatively constant, especially for exports, which may be due to Utah County developing new or larger trading partners better accessed via truck than freight rail.

## PUBLIC PARTICIPATION

Public knowledge, participation, and input are key elements in all areas of the Mountainland transportation planning efforts. It is the citizen that uses the transportation network daily that can supply the transportation planning agency information about congested areas, road connectivity, visions of future roads, transit routes, traffic signal timing, etc. Therefore, public participation is not only a requirement but a vital tool utilized by the Mountainland planners, engineers, and elected officials. Having meaningful and extensive public involvement from start to finish in the planning process enhances all plans and proposals which satisfies the goals of long range planning and makes the job of the Metropolitan Planning Organization easier.

MPO sponsored studies require extensive public participation. All stakeholders are invited to attend workshops, focus groups, open houses, and meetings. A public friendly visual brochure of the final report is also required.

## TITLE VI

MPO staff uses the latest census data to identify residential, employment, and transportation patterns of low-income, elderly, disabled, and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed. Staff conscientiously follows the Title VI of the Civil Rights Act of 1964 and the Title VI assurance executed by each State under 23 U.S.C. 324 and 29 U.S.C. 794, which ensures that no person shall, on the grounds of race, color, sex, national origin, or physical handicap, be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination under any program receiving federal assistance from the United States Department of Transportation.

The staff is committed to the public participation process; they eliminate

participation barriers, and strive to engage target populations. Many members of the MPO staff speak a language other than English, such as: Spanish, French, Latvian, Russian, Mandarin Chinese, Fijian, Hindi, Greek, and we contract with InterWest Interpreting for American Sign Language.

## PUBLIC PARTICIPATION

### OPPORTUNITIES

Mountainland staff is involved in various community-based committees where transportation issues are discussed. Staff members also make presentations to state, city, and county organizations; local area chambers of commerce; minority organizations and businesses; university classes, and local public officials on transportation planning activities.

Long range planning issues, transportation projects, and matters related to federal transportation funds are presented and discussed in the monthly Regional Planning Committee and Technical Advisory Committee meetings. The public is also welcome at any of the Mountainland MPO committee meetings.

- ***Mountainland MPO Regional Planning Committee Meeting:*** Includes all the mayors in Utah County, the Utah County Commission, a Utah State Transportation Commissioner, a Utah Transit Authority Board Member, a Utah Air Quality Board Member, and representatives from various state and federal agencies. This committee meets once a month.
- ***Mountainland MPO Technical Advisory Committee:*** Meets monthly and include technical and planning staff of all the participating jurisdictions and agencies in the MPO. The committee makes recommendations to Regional Planning Committee for

approval/adoption of all projects and studies that are funded with federal, state or local funds.

- **Utah Valley Trail Public Advisory Committee:** Meets regularly to discuss bike, trail, and pedestrian issues.
- **Regional Growth Committee:** This committee addresses land use issues along the Wasatch Front which encompass four counties. Elected officials, community planners, and other interested parties participate.
- **Public Advisory Committees:** These committees are comprised of interested people who either volunteer or are appointed by local elected officials. A Public Advisory Committee is established for all special studies and for the development of transportation related plans. These committees are instrumental in planning activities and are used to develop future projects and studies.

## 2040 METROPOLITAN TRANSPORTATION PLAN PUBLIC MEETING

March 17, 2011, with 57 attendees  
Written comments received that night

- Good idea to look forward to future transportation needs in Cedar Valley since there will be much future growth
- Would like to see proposed bus service routes in information is available
- Very good plan for transportation improvements in Utah Valley
- Need crosswalks at 800 South and 1200 West in Orem, for safety, student jaywalk a lot

- Thanks for widening SR-68 to include a bike lane for cyclist
- Would like to see a bike lane on State Street between American Fork and Pleasant Grove and also on Geneva Road
- Glad I-15 Payson to Santaquin will be widen to 3 lanes by 2020

## COMMENTS FROM RESOURCES AGENCIES APRIL & OCTOBER 2010 MEETINGS

### EPA

- Enough water on the west side of county
- Like the mixed lot sizes and PUDs
- Don't like road across Provo Bay to many environmental concerns

### Salt Lake Metro Water District

- SR-73- 150' ROW wide enough to support water pipe with trail

### Department of Agriculture

- Concerned about preservation of farm lands
- Would like list of projects that impact AG protection parcels

### Utah Lake Commission

- Where the bridge across lake would begin and end (west side Pelican Point / east side 800 North, Orem)
- Would like a trail around the south portion of lake, Utah County needs develop in future plan

### Utah Division of Water Reserves

- Plan for future water needs: agricultural water conversion to municipal and industrial water, water conservation
- Urban run-off/non-point source pollution in Saratoga Springs
- Urban encroachment to Utah Lake shoreline at several locations
- Local governments should agree on buffers to development around Utah Lake. Every new development along the Lake will run up against resource agencies/environmental interests who



- will want a buffer for wildlife habitat and water quality. It might increase efficiency if there is mutual agreement in the topic
- Sierra Club, Utah Clean energy, Utah Rivers Council, Western Resource Advocates have done extensive research on growth trends and resource use; it would be valuable to have this input

**Metropolitan Water District of Salt Lake and Sandy**

- Design coordination is critical to water supply to Salt Lake Aqueduct (SLA), Provo Reservoir Canal, and Jordan Aqueduct;

construction needs to be identified years in advance in order to avoid disruption to the construction timing and cost of transportation projects, trail coordination along SLA if possible but underlying property ownership should be revised and understood

- May want to consider what elements of growth will be affected by climate change, i.e. availability of water, micro-climate in Cedar Valley for example, frequency/extent of bad Air quality days

**WRITTEN COMMENTS RECEIVED DURING  
THE PUBLIC COMMENT PERIOD  
MARCH 15-APRIL 13, 2011**



March 31, 2011

Mountainland Association of Governments  
C/O Nan Kuhn  
586 E. 800 N.  
Orem, UT 84087-4146

RE: Construction of Cedar Valley Freeway and Hidden Valley Expressway

To Whom It May Concern:

This letter is to explain our position on a freeway in Cedar Valley. After discussing and evaluating different routes for trucks, we feel the Cedar Valley Freeway, would be the best option.

The Utah Trucking Association feels the Cedar Valley Freeway would be a great option for large commercial trucks traveling east from I-15 into Eagle Mountain, Tooele, and beyond. The creation of this freeway would help keep these large trucks off I-15 and other commuter roads. The Cedar Valley Freeway would provide the trucks a flat, easy to drive road. Because of this landscape, it would be a more cost-effective road than the other East-West road options, such as the Hidden Valley Expressway. We understand property owners along this corridor are ready and willing to begin a dialogue in order to donate the land and/or grant the necessary easements for this freeway to be built.

Driving semi-trucks on the Hidden Valley Expressway would make large trucks to go through the heart of Saratoga Springs and Eagle Mountain, creating a noise and traffic congestion issue. In addition, the expressway would be a steep and winding road that would be difficult for truck drivers to navigate in winter months.

Please consider making the Cedar Valley Freeway an important freight corridor in this growing area of the state.

Regards,

David M. Creer  
Executive Director

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State of Utah

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GREG BELL  
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.  
Executive Director

CARLOS M. BRACERAS, P.E.  
Deputy Director

March 11, 2011

Mr. Andrew Gruber, Executive Director  
Wasatch Front Regional Council  
295 North Jimmy Doolittle Drive  
Salt Lake City, UT 84106

Mr. Andrew Jackson, Executive Director  
Mountainland Association of Governments  
586 East 800 North  
Orem, UT 84097-4146

Dear Sirs:

Thank you for your leadership in developing the Regional Transportation Plans (RTP) for the Wasatch Front urbanized area and we particularly appreciate the partnership that continues to build between Wasatch Front Regional Council (WFRC) and the Utah Department of Transportation (UDOT). Over the last several months as project lists are coming together and our agencies are planning the future transportation systems for the State, UDOT is pleased with the progress that we are collectively making. At the same time, as we make progress, we are also faced with a variety of challenges in implementing these systems.

One of the challenges we face together is an issue that we have discussed in the past and hopefully will continue to discuss in a collaborative manner in the future. That issue is the complex and intertwined concerns we both have for meeting the travel needs on a state route. With the demands of travelers looking for options in how they make trips, whether an active form, on transit or in a vehicle, consideration of the physical constraints and as a result, financial constraints come into the picture. UDOT looks forward to working on this issue with WFRC in an open and productive fashion. As WFRC continues to finalize the RTP, we ask that the planning of future active transportation and transit corridors consider this issue. As these corridors are defined in the RTP and then discussed for the next steps of implementation, UDOT is ready to be a contributing partner in the dialogue.

Thank you for considering these thoughts and again, we look forward to working together on this and other issues we face.

Sincerely,

A handwritten signature in black ink, appearing to read "Cory Pope".

Cory Pope, P.E.  
Systems Planning and Programming

Director

CWP/cn

CC: Carlos Braceras, UDOT  
John Thomas, UDOT  
Jason Davis, UDOT



April 13, 2011

Andrew Jackson, Executive Director  
Mountain Land Association of Governments  
By Facsimile (801) 229-3801

**RE:     *Saratoga Springs City Comments – Draft 2040 Metropolitan Transportation Plan***

Dear Andrew:

We commend you for your work on the draft 2040 Metropolitan Transportation Plan. We understand that creating this plan is a complicated process with many moving pieces and diverse interests. These are the comments of Saratoga Springs City regarding the draft Plan:

1. We believe that preservation of a commuter rail corridor north and west of Utah Lake is critical for the long-term future of the area. We have done further analysis of the corridor shown on the map and have come to the following conclusions, which we would like to discuss with you:
  - a. The Commuter Rail Vision corridor now shown on the transit map appears to be infeasible due to slope constraints – we have developed an analysis of the proposed alignment supporting this comment which we will be happy to share with you.
  - b. We believe there is a preferable alternative route running along the northern edge of Utah Lake that we would like to discuss with you. This corridor does not have the same slope issues as the corridor currently shown, avoids cutting through the center of Lehi, and provides significantly more ridership by directly serving the planned Saratoga Springs City Center, as well as future employment in Eagle Mountain. In addition, we have reviewed the alignments with Lehi City and they are in favor of a rail alignment on the north edge of Utah Lake.
  - c. Right of way in a feasible alignment for Commuter Rail through Lehi, Saratoga Springs and Eagle Mountain needs to be preserved now; each year we wait we lose more of the corridor.

- d. We look forward to working with MAG on the Northwest Utah County Transit Study as discussed during the Regional Planning meeting on April 7, 20011. We would like to share our analysis of the proposed alignment for your review and consideration during this process.
2. We are pleased that the entire I-15 parallel corridor is shown on the map – Mountain View Freeway through Saratoga Springs, through the Lake Mountains, through Cedar and Goshen Valleys, connecting to I-15 in south Santaquin. We prefer that the entire alignment be designated as a freeway, since, according to MAG’s model, I-15 in Utah County will reach failure again by 2030
3. The Mountain View Corridor should be extended to Eagle Mountain through Saratoga Springs in early phases.
  - a. We are pleased to see that the Plan recognizes that SR-73 is no longer a logical terminus for the Mountain View Corridor with Pioneer Crossing and Pony Express becoming the primary east-west connections through Lehi to I-15. The freeway connection through Hidden Valley to Eagle Mountain also is important to relieve congestion on east-west corridors.
  - b. The newly approved City Center in Saratoga Springs with the Mountain View Freeway extension and commuter rail will create a jobs/housing balanced smart growth center which will shorten commuting and shopping trips.
4. To summarize specifically –
  - a. Commuter Rail as Vision, with Lehi, Saratoga Springs and Eagle Mountain as Corridor Preservation in Phase 1, 2011-2020
  - b. Adjust the infeasible Commuter Rail alignment now in order to facilitate corridor preservation
  - c. Allow City involvement with the Northern Utah County Transit Study
  - d. Extend MVC to Pony Express as Phase 1
  - e. Extend MVC through Hidden Valley and Eagle Mountain in Phase 2, with corridor preservation in Phase 1

Thank you and the MAG staff for listening and working to help meet the needs of all the communities and the county. We enjoy working with you thank you for your excellent work.

Sincerely,



Mia Love  
Mayor

CC: Shawn Seager  
Shawn Eliot



FIND YOURSELF IN



January 19, 2011

Andrew Jackson  
Executive Director  
Mountainland Association of Governments  
586 East 800 North  
Orem, UT 84062

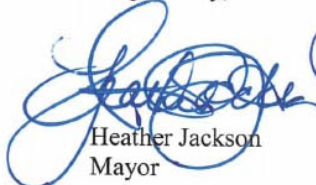
Andrew,

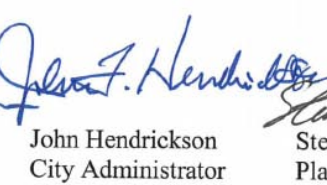
First of all, we want to thank you for the time and effort put forth by you and your staff on the creation of the 2040 Metropolitan Transportation Plan, and especially for the many meetings and discussions you have had with the northwestern Utah County Cities. We have been impressed with the way you all have responded to the needs of our region and to our seemingly endless requests and concerns. We understand the difficulty in trying to design a transportation system that will meet the needs and desires of each city as well as solving transportation issues as an entire region.

We are in support of the January 13, 2011 draft Road Projects – 2040 Metropolitan Transportation Plan that was created based on the outcome of the meeting held that same afternoon between MAG, Eagle Mountain City, and the City of Saratoga Springs. Both cities agreed to this plan in that meeting, and we believe that it meets the projected needs of both Saratoga Springs and Eagle Mountain. We also support the road projects throughout the County as depicted on the plan. We strongly recommend that you move forward with this plan, continuing in the public comment and approval process, without any additional changes. We look forward to being involved in that process.

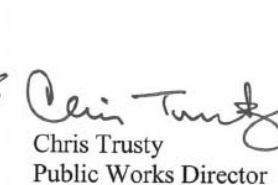
Again, we appreciate your continuing efforts on behalf of the cities throughout Utah County, and look forward to working together to meet the transportation needs of the region as a whole.

Respectfully,

 Heather Jackson  
Mayor

 John Hendrickson  
City Administrator

 Steve Mumford  
Planning Director

 Chris Trusty  
Public Works Director

1650 E. Stagecoach Run  
Eagle Mountain, UT 84005  
(801) 789-6600 office  
(801) 789-6649 fax  
info@emcity.org



669 West 200 South

Salt Lake City, UT 84101

April 8, 2011

Andrew Jackson, Executive Director  
Mountainland Association of Governments  
586 East 800 North  
Orem UT 84097

Dear Mr. Jackson:

Utah Transit Authority would like to thank the Mountainland Association of Governments (MAG) for the opportunity to comment on the *2040 Metropolitan Transportation Plan (MTP)*. We have taken the time to review the plan and hope that our comments will be received in a spirit of collaboration.

Utah Transit Authority is pleased with the direction of the proposed plan especially when considered alongside the *Wasatch Choices for 2040 Regional "Vision" Plan*. These two documents together represent the brightest future for transportation planning that the Wasatch Front has seen in recent years.

In the spirit of continued collaboration our general comments on the plan are:

- With the large majority of the plan (more than 45%) designated as enhanced bus or BRT running in existing arterials; UTA recognizes the importance of an integrated collaboration process with UDOT and local municipalities regarding the RTP and the Transportation Improvement Plan (TIP). UTA believes that projects that are being advanced in the TIP can be evaluated for cost-effective joint project development in order to provide the best value for each investment.
- UTA fully supports the Regional Growth Principles adopted as a part of the *Wasatch Choices for 2040 Regional "Vision" Plan* and we look forward to working closely with each entity to ensure the principles are integrated into each RTP project that is advanced for development.
- UTA endorses MAG's recognition of pedestrians and bicyclists. Giving them access to the transportation system is a critical part of each RTP project advanced for development. We also endorse the MAG's consideration of trails, bike lanes and other amenities that support non-motorized transportation along the Wasatch Front.



669 West 200 South

Salt Lake City, UT 84101

Andrew Jackson

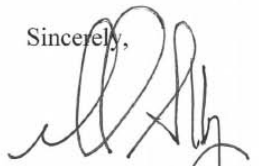
Mountainland Association of Governments

Page 2

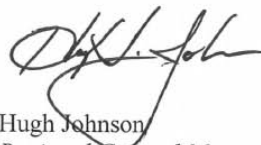
- UTA understands its role in regional and local air quality and fully supports the objectives in the plan. UTA is committed to working with federal, state and local partners to ensure the air quality objectives are addressed as a part of each RTP project. We believe multi-modal strategies are an important contribution to the reduction of vehicle miles traveled, which are the major contributor to the air quality issues Utah faces. Through initiatives such as walk able communities, mixed-use developments, congestion pricing and alternative fuel incentives, we are confident we can make a positive impact on air quality.

In general, we look forward to partnering with MAG as well as with local municipalities, UDOT and other state and Federal agencies to implement both the *2040 Mountainland Association of Governments Plan* and the *Wasatch Choices for 2040 Regional "Vision" Plan*. With this cooperation we believe that we can not only enhance the ability of our Region's transportation networks to meet the anticipated travel demand for the next 30 years but we can also contribute to a better quality of life for all residents along the Wasatch Front.

Sincerely,



Michael A. Allegra  
General Manager  
Utah Transit Authority



Hugh Johnson  
Regional General Manager  
Timpanogos Business Unit

Cc: John Njord, UDOT  
Carlos Bracerias, UDOT  
Cory Pope, UDOT





United States Department of the Interior  
FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

April 12, 2011

In Reply Refer To  
FWS/R6  
ES/UT  
11-CPA-0052

Nan Kuhn  
Mountainland Association of Governments  
586 East 800 North  
Orem, Utah 84097-4146

RE: Draft 2040 Metropolitan Transportation Plan

Dear Ms. Kuhn:

We have reviewed Mountainland Association of Governments' (MAG) Draft 2040 Metropolitan Transportation Plan (Plan), including the proposed phasing of future highway and transit projects. Under recent transportation planning legislation (SAFETEA-LU), the resource agencies and the Metropolitan Planning Organizations (MPO) are directed to coordinate on long-range planning efforts; we believe that both transportation planning and Utah's natural resources can benefit from these efforts. We attended the meeting of October 26, 2010, at which time the MPOs, including MAG, presented their preliminary draft long-range plans to State and Federal resource agencies. We appreciate this opportunity to comment on your proposed Plan, and also to comment more generally on landscape-scale planning opportunities.

*General Comments*

We support MAG's involvement and leadership in the Wasatch Choice for 2040 process. This is a landscape-scale effort undertaken to identify existing natural and built areas throughout the Wasatch Front, examine future growth and land use potential, and develop strategies for managing growth in a manner that maintains natural space connectivity and viability. We support and encourage the MAG and the other MPOs to use green infrastructure concepts within landscape-scale planning, identify priorities for land uses, opportunities for preservation and restoration, and strategies for maintaining viable natural places and corridors within the landscape. We believe the MPOs have a critical role in promoting such landscape-scale green infrastructure planning. We strongly encourage MAG to incorporate the results from the Wasatch Choice for 2040 process and to take an active leadership role in landscape-scale green infrastructure planning. We note that EPA and the Federal Highways Administration provide grants to support such efforts, and believe numerous other State and Federal partners, including the Fish and Wildlife Service, will be available to offer assistance.

At the October 26, 2010, meeting the Utah Department of Transportation (UDOT) provided an introduction to uPlan, their recently-developed GIS-based transportation planning tool.



UDOT developed this tool to provide environmental data to inform the transportation planning process, including the development of long-range plans. We support the use of a geographic mapping tool that identifies environmentally-sensitive areas enabling transportation planners to avoid red flag issues, use landscape-scale analysis for long-range planning, streamline project development, and identify mitigation opportunities. The time is right to establish a GIS-based application like uPlan; however, at this point we believe the ecological components of this tool should be improved before its use. Improved ecological spatial data (e.g., high resolution wetland and riparian data; sensitive fish and wildlife habitats; and priority areas for preservation, restoration, and mitigation) are needed to make this a viable tool for planning, relative to ecological resources. We believe sustained support and funding can translate into an improved uPlan tool in the future. We encourage UDOT, MAG, and the other MPOs to support uPlan, recognizing its current limitations as well as its future potential.

*Specific Comments on the Draft 2040 Metropolitan Transportation Plan*

We provide the comments below to give MAG and UDOT early feedback on the proposed corridors. Because the proposed corridors are conceptual in nature, our comments are similarly broad in scope and are not inclusive of all potential concerns that could arise from a project-level analysis. Below we identify initial concerns relative to fish and wildlife resources, including species listed under the Endangered Species Act (ESA).

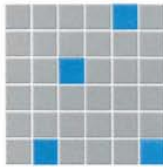
1. Provo Bay and Utah Lake Crossings (South Wasatch Freeway [26]; Utah Lake Crossing Freeway [32]) – These projects would likely impact the Utah Lake ecosystem and associated wetlands, as well as ESA-listed species including June sucker and Ute ladies'-tresses.
2. Utah Lake Periphery Roads (Westside Connector [48]; Pony Express Parkway - Saratoga Springs to Pleasant Grove [54]; Northwest Connector [73]) – These projects would likely impact peat soil wetlands and springs, as well as ESA-listed species including June sucker and Ute ladies'-tresses.
3. Cedar Valley Roads (Lake Mountain Expressway [16 and 28]; Lake Mountain Freeway [17]; Cedar Valley Freeway [27]; Eagle Mountain 3400 North [88]; Eagle Mountain 5600 North [89]) – These projects would likely impact wetlands, springs, wildlife movements. The extensive induced urban growth accompanying these roads would fragment wildlife habitat substantially. This area is an excellent candidate for landscape-scale planning using green infrastructure concepts.

We appreciate the opportunity to provide these comments. If you have any questions or if you need further assistance, please contact Betsy Herrmann, Fish and Wildlife Biologist, at the letterhead address or (801) 975-3330, extension 139.

Sincerely,



For  
Larry Crist  
Utah Field Supervisor



State of Utah  
School & Institutional  
Trust Lands Administration

Gary R. Herbert  
Governor  
  
Greg Bell  
Lieutenant Governor  
  
Kevin S. Carter  
Director

675 East 500 South, Suite 500  
Salt Lake City, UT 84102-2818  
801-538-5100  
801-355-0922 (Fax)  
www.trustlands.com

April 11, 2011

Andrew K. Jackson, Executive Director  
Mountainland Association of Governments  
586 East 800 North  
Orem, UT 84097

Dear Mr. Jackson:

Re: 2040 Metropolitan Transportation Plan – Final Draft

The State of Utah School and Institutional Trust Lands Administration ("SITLA") has reviewed the Final Draft of the 2040 Metropolitan Transportation Plan ("Plan"), which was posted on the Mountainland Association of Government ("MAG") website in March 2011 and presented to the public at a March 17<sup>th</sup> open house. SITLA commends MAG for providing the opportunity for public comment.

As a large landowner in Utah County, SITLA is impacted by various roadways (see map on page 3) proposed in the Plan. Therefore, SITLA offers the following comments on the *Road Projects* map regarding SITLA's lands:

- Project #10-Hidden Valley EXPWY/FWY – The proposed expressway/freeway adds no value to SITLA's planned Hidden Valley development unless there is local access in Hidden Valley. The \$156.5 million cost appears insufficient for the significant grade, cut and fill requirements to construct an expressway/freeway to UDOT standards through the mountainous Hidden Valley area.
- Projects #16-17-28-Lake Mountain EXPWY/FWY – SITLA supports this phased roadway as it provides access to, and through, SITLA's Mid-Valley parcel in Eagle Mountain located at the intersection of Projects #16-53-89. SITLA has dedicated a 206-foot right-of-way to accommodate a transit corridor next to this roadway.
- Project #24-Mountain View FWY (Foothill) – SITLA supports this roadway with preference for an expressway, rather than a freeway, along the Foothill portion of the roadway through SITLA's Saratoga Springs properties.
- Project #27-Cedar Valley FWY – SITLA supports the conceptual roadway alignment crossing the hills between Cedar Valley and Goshen Valley. SITLA is actively working with Santaquin City to plan the future roadway's right-of-way on SITLA's Santaquin property.



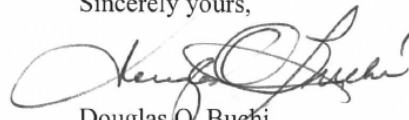


- Project #53-Pony Express PKWY – SITLA supports the proposed widening of this roadway as it improves access to SITLA's Mid-Valley parcel in Eagle Mountain.
- Project #89-Eagle Mountain 5600 North – SITLA supports this proposed roadway as it will improve access to SITLA's Mid-Valley parcel in Eagle Mountain.

SITLA supports the concepts captured in the *Transit Projects* and *Bicycle & Pedestrian Projects* maps.

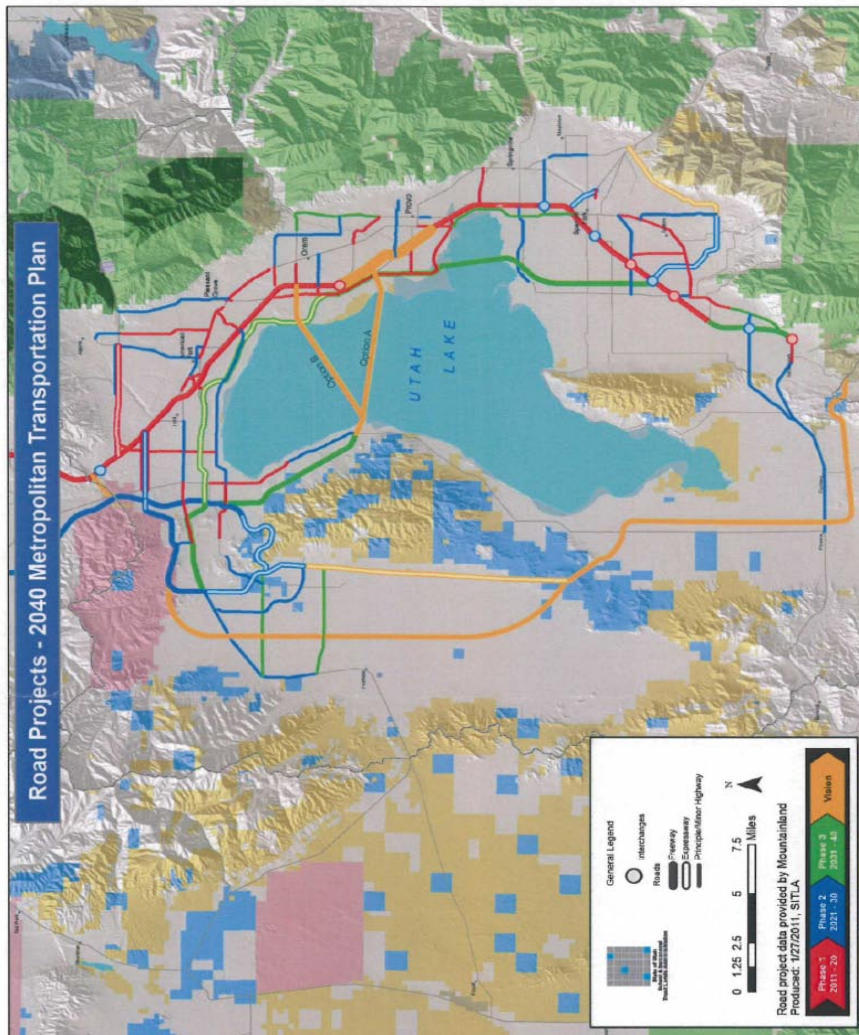
SITLA appreciates having the opportunity to submit these comments for your consideration. Should you need clarification of these comments, please contact me (801-538-5170, [douglasbuchi@utah.gov](mailto:douglasbuchi@utah.gov)) or Elise Erler (801-538-5179 or [eliseerler@utah.gov](mailto:eliseerler@utah.gov)).

Sincerely yours,



Douglas O. Buchi  
Assistant Director, Planning & Development Group

Map showing SITLA lands (in blue) and Plan roads



Why Provo City should not build the proposed Northwest Connector

April 8, 2011

Mountainland Association of Governments,

Provo City, with local tax payer funds, proposes to build a five-lane highway through rural west Provo, a so-called Northwest Connector. Soon, the city plans to acquire the land. The highway's declared purpose is to increase north and south "connectivity" in West Provo, but in fact it will serve little practical purpose other than to facilitate sprawl over the last large open spaces within the city limits, add to air pollution, and congestion. We argue that Provo, with Utah Lake forever limiting the city's growth to the west, should not aspire to be a stunted version of West Valley City or Kearns. West Provo does not need a little Bangerter Highway. We oppose the proposed highway on the following grounds: (1) it does not meet any current or future need for movement north and south in west Provo; (2) it will, rather, substantially increase traffic moving east and west, which is already heavily congested during peak hours; (3) we ought to protect rather than threaten what little farmland yet remains in our valleys; and (4), the area through which the proposed highway is to pass currently serves as a substantial habitat of fields, groves, and wetlands for various kinds of wildlife that are joy to watch. In addition to paving over good farmland and a wonderful viewscape, about half the routes the city proposes for the highway unapologetically invade the Despain Conservation Easement we established in 2002.

The only plausible justification for the proposed highway is to use public funds to give private developers access to open land. However, the only rationalization provided by city officials at a recent public meeting was that the highway would meet the needs of growing traffic demand north and south in west Provo. The Northwest Connector Task Force forecasts that between 2007 and 2040, the duration of a trip from Utah Valley University to the Provo City Airport will increase by 21%. Even if that were true, it would mean the current trip, which takes 12 minutes, would increase to a little more than 14 minutes—hardly justification for spending millions of dollars of public money. From our perspective, there is already—and will be—more than sufficient north/south connectivity on Provo's narrow west side. We have underway a massive freeway expansion that in itself is bound to reduce north and south travel times, particularly with new, efficient on and off ramps; we are pleased with the near-completion of the FrontRunner rail lines through the west side; within the last couple years, the city completed broad Independence Avenue; and within the last couple months, the city threw up a monstrous bridge that connects capacious Lakeshore Drive with Center Street and the airport. We also hear that Geneva Road itself is due for a major upgrade. Both Independence Avenue and Lakeshore Drive could, by simply repainting lines, handle four lanes of traffic, although there is obviously no need to do so. Traffic is light. We strongly believe that existing roads and the improvements in which we are currently engaged will more than meet the traffic needs of the this small area bound between I-15 and the lake. And while many of us are pleased to see commuter flights finally arrive in Provo, we figure that if Salt Lake International, one of the largest airline hubs in the country, can get by with a single freeway exit, it is hard to imagine that we will ever need three of them, at Center Street, University Avenue, and, lastly, University Parkway, to which the Northwest Connector would not be directly connected anyway.

Second, if housing and development were unwisely permitted to expand west, it would not create much new north and south traffic. But any development would increase traffic substantially east and west. Due to various natural and manmade obstacles (Grandview, the Provo River, Interstate 15, and four railroad lines) we have precious few routes from which to choose. 820 North, which would draw most of the traffic, is already rather congested during periods of high demand. A large number of those living on the west side of Provo work or study at such major institutions as Brigham Young University, Provo High School, and Utah Valley Regional Medical Center. Like it or not, Bulldog Boulevard is Provo's de facto downtown, with more restaurants and shops, and larger institutions, than Center Street. Currently 820/800 North takes much of that traffic burden, passing through existing residential areas. East of 500 West, 800 North often backs up behind stop lights, sometimes two or more blocks deep during rush hour. 820 North passes under I-15 and over multiple railroad crossings at grade level. Frequent freight trains (soon to be joined by FrontRunner) already back up traffic all the way to Geneva Road on one side and to the Independence Avenue roundabout on the other, creating confusion, danger, and frustration at both locations. This problem cannot be solved by adding



more lanes. The building of Freedom Academy, whose 650 students must be dropped off and picked up daily, has brought substantial additional traffic to 820 North, traffic which was not foreseen by the city and which has imposed a lot of frustration on the residents of the Rivergrove neighborhood. Contrary to the claims, new roads and highways do not ease congestion. They only exacerbate it along all points in between.

Open farmland, thirdly, is not only beautiful but forms a resource of national and local security, and it should be defended by our elected representatives rather than paved over under the lying banner of "smart growth." There is nothing "smart" about destroying farms. We of all people, the legacy of self-sufficient pioneers, should understand the value of irrigated soil. While it is true that most of the food we eat in Utah currently comes from thousands of miles away, that might not be possible in a future where gasoline is only likely to get more expensive. Walmart, which has seven shopping centers in Utah Valley, six selling groceries, has a goal of buying 9% of its produce locally. Let's give ourselves half a chance of supplying it so we can all eat fresher, tastier food. And let us stand behind our remaining small family farmers and provide them incentives to keep at it rather than empower developers to wrench it from their hard-working hands. We should be grateful we can eat fresh peaches every year in our valley. Why can't we hope to eat other local produce. Paying for a five-lane highway that wedges itself through our city's only remaining sizable farms will be the crowbar developers use to pry land from those who have, for a century and a half, been putting our land to the community's best use.

Fourth, we need to preserve some open spaces so we can appreciate the landscape and enjoy wildlife. Small fish shelter in the shallow creeks and springs just west of the Lakeshore neighborhood. This may be crucial habitat for June Suckers. And bird life in these wetland fields and tree rows is extraordinary, whether you're a hunter, a bird watcher, or both. Delta has held their Snow Goose Festival for the last 18 years, drawing 30,000 tourists annually by promoting the birds' visits and providing free spotting scopes. We too get Snow Geese, but also Wood Ducks, Pintails, American Wigeons, three varieties of Teal, Ruddy Ducks, Redheads, Canvasbacks, Northern Shovelers, and Gadwalls, just to mention the ducks. Most of these birds are so skittish most Americans have never seen them. Get within a half mile, and they take flight. In these fields one can also spy Sand Hill Cranes, Trumpeter Swans, Bald Eagles, Great Horned Owls, and Osprey, among many other less exotic species, many of whom feed, mate, and nest here. We have two pair of Marsh Hawks in these farm fields that have returned year after year. It is a stunning display, especially in the spring, and tourists would come if we promoted it. These fields, not the lake, form the main attraction of walking along the lake trail, as Mayor Billings pointed out years ago. If we allow a highway, not to mention housing and warehousing, to invade these spaces, much of the animal life will leave. Most of these birds are here because they, unlike our neighborhood Robins and Starlings, tolerate neither humans nor smart growth. If we invade and narrow that space more than it already has been, we starve them out. There is really no other space like it in the entire valley in its mix of habitats. They have no place else to go.

In Provo, we are hemmed in by mountains on one side and a lake on the other. This should be viewed as a wonderful asset, not a limitation. We cannot expand indefinitely, so let's stop while we are ahead. Let us save some open spaces and honor those others that we thought we had already saved. This is a case where economic development runs up against quality of life, and quality of life of the many should trump the profits of the few. The proposed highway offers so little benefit and so many disadvantages there is no justification to spend public money nor to exercise eminent domain to wrest land from our neighbors. It is an unjustified invasion of private property. Let's continue to focus our successful efforts on redevelopment in Provo's core. Focusing on the core enhances our city's quality of life. Focusing on the periphery contributes to traffic snarls, amplifies some of the worst seasonal air pollution in the nation, and fosters the destruction of cherished landscapes, the way sprawl always has. Provo's current motto is "Making Life Better." This is a nice place to live. Let's keep it that way. From this point in our history, the only smart growth for Provo is to look creatively inward rather than sprawl thoughtlessly outward.

Sincerely,



Shawn W. Miller  
2836 W 880 N  
Provo, UT 84601

WHITE HILLS WATER COMPANY, INC.  
1099 W. SOUTH JORDAN PKWY.  
SOUTH JORDAN, UT 84095  
PH. 801-495-3414 / FAX 801-495-3420

March 2, 2011

RE: Construction of Hidden Valley Expressway

Mountainland Association of Governments  
C/O Nan Kuhn  
586 E. 800 N.  
Orem, UT 84087-4146

To Whom It May Concern:

On behalf of White Hills Water Company, Inc., I would like to take this opportunity to protest the proposed Hidden Valley Expressway running through Saratoga Springs and Eagle Mountain, as outlined on the January 13, 2011 Metropolitan Transportation Plan. It is understood that travelers need other East-West travel options in this area of Utah County, yet this road does not align itself with Eagle Mountain City's Master Plan, nor does it grant the opportunity for Eagle Mountain City to compete with Saratoga Springs in terms of accessibility.

This road would hinder future growth and development in Eagle Mountain. As a water company, we provide culinary and irrigation water service to several hundred homes in West Eagle Mountain. The growth of Eagle Mountain is essential to continue to maintain the smooth operation of a small water company such as ours. We need more homes and businesses in Eagle Mountain! The Hidden Valley Expressway unnecessarily diverts transportation development funds into Saratoga Springs once again.

The Cedar Valley Freeway is a better alternative to the expressway. This road would open up development further west and would be significantly less money to build. Not only is this land flat and sparsely populated, the property owners along this corridor are willing to negotiate land donations and/or grant the necessary easements for this project to be built.

The Hidden Valley Expressway is not a good answer to help solve the traffic issues of Saratoga Springs and Eagle Mountain.

Regards,



Nate Shipp  
Manager, White Hills Water Company, Inc.

SL6, LLC  
1099 W. South Jordan Pkwy.  
South Jordan, UT 84095



February 28, 2011

RE: Construction of Hidden Valley Expressway

Mountainland Association of Governments  
C/O Nan Kuhn  
586 E. 800 N.  
Orem, UT 84087-4146

To Whom It May Concern:

Please accept this letter as a protest to the proposed Hidden Valley Expressway running through Saratoga Springs and Eagle Mountain, as outlined on the January 13, 2011 Metropolitan Transportation Plan. This corridor does a disservice to Utah County travelers as well as to the growth and development of Eagle Mountain. While we understand the need for additional arterial roads west of Utah Lake, we believe there are alternative options that would be more cost effective, have less of a negative impact on existing residential development, and would also be more congruent with Eagle Mountain City's Master Planning and Zoning plans.

As the owner of the Silverlake master-planned community, one of the largest and fastest growing residential subdivisions in Eagle Mountain, we feel the Hidden Valley Expressway will unnecessarily drive hundreds of cars through the subdivision each day. We have spent years making Silverlake a quiet, cohesive, and family-oriented subdivision. The creation of this expressway would undoubtedly cause noise and traffic as well as cause a significant reduction in value to the current homes as well as the 1800 undeveloped units in the project.

As an alternative to this expressway, we see the Cedar Valley Freeway as a much more positive and well thought out alternative. This road would open up development further west and would be significantly less money to build. Not only is this land flat and sparsely populated property owners along this corridor are ready and willing to begin a dialogue in order to donate the land and/or grant the necessary easements for this project to be built.

I believe that in this particular situation, the Hidden Valley Expressway is not a suitable answer to help solve the traffic issues of Saratoga Springs and Eagle Mountain.

Regards,

A handwritten signature in black ink that reads "Ron Thorne".

Ron Thorne  
Manager, SL6, LLC





1099 W. South Jordan Pkwy.  
South Jordan, UT 84095

February 25, 2011

RE: Construction of Hidden Valley Expressway

Mountainland Association of Governments  
C/O Nan Kuhn  
586 E. 800 N.  
Orem, UT 84087-4146

To Whom It May Concern:

As the manager of Oquirrh Wood Ranch, LLC (Pole Canyon), I need to protest the proposed Hidden Valley Expressway running through Saratoga Springs and Eagle Mountain, as outlined on the January 13, 2011 Metropolitan Transportation Plan.

While I am glad that state and local governments are taking action to solve the transportation needs of businesses and homes on the West side of Utah Lake, I strongly feel that the Hidden Valley Expressway misses the mark. This road does not allow Eagle Mountain to compete with Saratoga Springs for new development. Further, we feel that the Cedar Valley Freeway is a much more viable option.

The proposed Cedar Valley Freeway runs along flat, large open fields. It would also run directly through Eagle Mountain's proposed industrial park. The creation of this freeway, as opposed to the Hidden Valley Expressway, would help Eagle Mountain City to gain the much-needed attention of Commercial and Industrial companies. Several Fortune 500 and Fortune 100 companies have already sought out this area of the valley to expand their facilities. In each of those discussions, transportation in the area has been a key issue. Eagle Mountain City is working hard to entice these companies to bring jobs to the area.

Please deny the Hidden Valley Expressway. It is a poor choice to help expand, develop, and draw businesses to Eagle Mountain and surrounding areas.

Regards,

A handwritten signature in blue ink, appearing to read "Jared Westhoff". The signature is fluid and stylized, with a long horizontal stroke at the end.

Jared Westhoff  
Manager, Oquirrh Wood Ranch, LLC





1099 W. SOUTH JORDAN PARKWAY  
SOUTH JORDAN, UT 84095  
PHONE: 801-495-3414  
FAX: 801-495-3415  
WWW.DAIUTAH.COM

February 22, 2011

RE: Construction of Hidden Valley Expressway

Mountainland Association of Governments  
C/O Nan Kuhn  
586 E. 800 N.  
Orem, UT 84087-4146

To Whom It May Concern:

I would like to take this opportunity to protest the proposed Hidden Valley Expressway running through Saratoga Springs and Eagle Mountain, as outlined on the January 13, 2011 Metropolitan Transportation Plan.

As one of the largest land developers in the state, we see the benefit and the need to develop proper transportation corridors in the Saratoga Springs/Eagle Mountain area. We feel that the proposed Hidden Valley Expressway is not the best option. Other proposed arterial roads would be easier to build, have less impact on current developments, and be much more cost effective.

While I am glad that state and local governments are taking action to solve the transportation needs of businesses and homes on the West side of Utah Lake, I strongly feel that the Hidden Valley Expressway misses the mark. This road does not allow Eagle Mountain to compete with Saratoga Springs for new development and is a more costly route. Further, we feel that the Cedar Valley Freeway is a much more viable option.

I believe that in this particular situation, the Hidden Valley Expressway is a poor choice to help expand, develop, and draw businesses to Eagle Mountain and surrounding areas.

Regards,

Milt Shipp  
CEO, Development Associates, Inc.

## COMMENTS FROM THE MOUNTAINLAND WEBSITE

Ryan Bybee &lt;info@mountainland.org&gt;

Thu, Apr 7, 2011 at 11:12 AM

Reply-To: ryan@cadencecapital.net

To: nkuhn@mountainland.org

I represent the landowners of the Hidden Valley property in Eagle Mountain. The proposed Hidden Valley Expressway comes right through the middle of our property. We have spent the last 3 years working on and entitling a very large Masterplan that includes our Hidden Valley property. Our vision of the Hidden Valley property is being drastically impaired by the Hidden Valley Expressway. This property has been in the Smith Family for generations and was meant to be a "legacy" property that the family could be proud of, the entire design has been about creating a very unique community that would command greater value and establish a higher end community. The expressway impacts about 100 acres of 300 developable acres and there has been no discussion about with us about how this impact is mitigated. We have voiced concern and submitted comment but it doesn't seem to matter. Our Master Plan was approved by Eagle Mountain City over year ago and yet the Master Plan has not been taken into account in the financial/cost models of the proposed alternatives. At the end of the day this road is being pushed through to accomodate the needs of other larger developers and is being done at our expense and we will continue to do what it takes to move our plan forward without this road until our concerns are discussed and mitigated.

Andrew R Manning &lt;info@mountainland.org&gt;

Mon, Apr 4, 2011 at 6:09 PM

Reply-To: andrewmanning@yahoo.com

To: nkuhn@mountainland.org

The proposed Northwest connector through the wet lands of west provo should not be built. It is an unnecessary redundant road running north / south, such as Geneva and I15. We have a new interchange at center street that is the best access to the Provo airport. Also it will run through designated wetlands on the west side of Provo. There is no way to build homes without putting them in the wet lands as well.

We need to preserve what little open space we have left.

why would anyone travel through a neighborhood to get to the airport when they can use the new center street interchange go west on center to 3110 west to the airport. It's a more direct route.

This is a foolish way to spend my taxes. What we need in Provo is better east/ west routes and up grade to the highway we have on the west side known as Geneva Road.

Kyle Fuller &lt;info@mountainland.org&gt;

Mon, Apr 4, 2011 at 8:04 AM

Reply-To: kfuller@farmersagent.com

To: nkuhn@mountainland.org

I live at 3043 W 1350 N, very close to the proposed Provo Northwest Connector. After living in this area for the past 7 years, I still cannot grasp the reasoning behind the Northwest Connector. We are in dire need of West to East mobility, not another North-South route. There is no destination that way. I will continue to take Geneva Road or the Freeway and would suggest a 4 lane Geneva road would be a much better alternative than another road to nowhere. There is a lot of marshland and Utah Lake west of us so I don't understand why there is a massive road being planned out here (unless we are building houses on stilts in the future). Please come drive out here before you begin the planning of this road. It seems to be a very big waste of taxpayer money and begs the question of where this was conceived??

info@mountainland.org <info@mountainland.org>  
Reply-To: lblackham@utah.gov  
To: nkuhn@mountainland.org

Thu, Apr 7, 2011 at 10:43 AM

I am writing in response to your invitation for public comment on the proposed long range transportation plans for Utah County. As Commissioner of the Utah Department of Agriculture and Food, I write not only on behalf of the agriculture producers who stand to be affected by the by proposed road construction, but on behalf of the entire agriculture industry in the state of Utah

I am troubled by the apparent disregard of the criticality of the agriculture lands which stand to be destroyed if the proposed plans move forward. Of course it is problematic that the status of Agriculture Protection Areas (APA) and Century Farms stands to be trammied. This reflects an apparent absence of understanding of the grave potential of the proposed road construction to profoundly damage or ultimately eliminate already endangered agriculture production in west Utah County.

Agriculture seems to consistently be dismissed as less important than wetlands, less important than threatened or endangered species, less important than urban expansion and infrastructure, and on and on. After all, grocery shelves are always filled with many food choices, and presumably always will be. However, that presumption lures us into the same complacency that has made the United States dependent on foreign countries to meet over 70% of our demand for energy resources. U.S. agriculture imports are increasing annually as more and more of our country's agriculture land goes out of production. In today's world, it should be unsettling to all of us that we find ourselves increasingly reliant on foreign-grown food to feed America's growing population.

When I served in the Utah Senate, I sponsored the law that created Utah's Agriculture Protection Area (APA) program. It was not intended to simply acknowledge and celebrate local agriculture, but was designed to bestow a special and formidable land status that would protect the land and preserve it for production. The APA designation also seeks to recognize food and food production as the most fundamental and essential of all human activities, and to affirm the enormous value the State of Utah places on it as a foundational component of our quality of life.

Utah has already lost **most** of its prime agriculture land and I believe it irresponsible for the state of Utah to condemn the precious few prime agricultural lands remaining along the Wasatch Front. It is important to note that it is possible to mitigate for loss of wetlands or impacts to protected species. But agriculture land, once converted to highways and development, can never be mitigated; it is lost to food production forever. And as that continues to happen, we are not just putting our agriculture community at risk, but every one of us who enjoys the bounties of the harvest.

It is unfortunate that the agriculture community was not represented on your core planning team. I hope you will consider including someone from my department or the industry at the beginning of any future planning initiatives. Nonetheless, I look forward to working with the UDOT planning team to give consideration to transportation routing in the 2040 Utah Valley Metropolitan Transportation Plan that would not disrupt agricultural operations in Utah Valley.

Sincerely,

Leonard M. Blackham  
Commissioner, Utah Department of Agriculture and Food



Ron Phillips <info@mountainland.org>  
Reply-To: karen.ron@gmail.com  
To: nkuhn@mountainland.org

Sun, Apr 3, 2011 at 9:10 PM

Provo City should be spending money on east-west mobility such as 820 N rather than studying options for a **northwest connector**, another unnecessary north/south connection that will duplicate the current Lakeshore Drive and Geneva Road connections. The southwest connector makes a great deal of sense, but the northwest connector makes no sense at all for these reasons:

1. There is no reasonable destination on the northwest end of the proposed road - Geneva Road at 2000 N. It will only dump traffic onto Geneva Road, which has enough traffic, or into the roundabout at 2000 N and Sandhill Road, which is not built to handle much larger volumes of traffic.

2. Traffic from the airport that has a northern destination will most likely use Center St. east to the new \$30 million+ interchange at I-15, then head north on I-15. I know that I will not drive an extra 4-5 miles on City streets to access the interstate when it will be very accessible from the new, improved Center St. interchange.

3. Lakeshore Drive, with the new \$2 million "bridge to nowhere" that now connects Lakeshore Drive to Center St. at 3110 West, is carrying hardly any additional traffic than before the bridge was built. 3110 West connects Lakeshore Drive directly to the airport, and yet virtually no traffic is using that route to Geneva Road. Another parallel road between Lakeshore Drive and the lake is unnecessary. The Mountainland Association of Governments (MAG) traffic modeling that was recently done indicates this proposed road will only generate enough traffic in the next 30 years to barely justify a collector street, and yet the City staff made them change the designation on the MAG Metropolitan Transportation Plan to an arterial. There is no technical justification for a new arterial road in this alignment.

4. I know the developers of the yet-to-be-built "Celebration" or "Villages" development do not want that northwest connector coming through their development and forming a dangerous barrier for their future residents, but they acquiesced to the City staff as they knew the staff was determined to have this road. The developers and their consultants did not want to do anything to harm their chances of development approval, so they put it into their plans.

If this proposed road was connecting to another road that has an interchange with I-15, it might make more sense, but it does not, and it seems less than prudent to be considering spending \$12-15 million on another "road to nowhere."

Ron Phillips  
Provo Resident

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Ryan Bybee <ryan@cadencecapital.net>  
To: nkuhn@mountainland.org

Mon, Nov 22, 2010 at 9:00 AM

Nan,

I got your contact info off the MAG website. I have been attending some of the meetings etc. regarding the 2040 plan that is being updated June 2011 and am becoming more and more concerned with one of the alignments in the Eagle Mountain/**Saratoga area**. Our group is the largest landowner in the **Hidden Valley** area of Saratoga where a proposed Expressway is being shown on the newest maps. As this expressway moves through the Hidden Valley area 90% of the road is located on our property and significantly impacts our approved Masterplan which has a significant number of future residents that will likely have to be relocated when and if this road comes through in the future. We concerned with the financial burden this future road would impose on our property, we would like to discuss funding issues and ROW preservation issues with the powers that be at MAG so that all of the issues are understood as the long-term planning moves forward.

Can you put me in contact with whoever would be most helpful in discussing these issues.

Thanks,

Ryan

Ryan Bybee





Jim McNulty <[info@mountainland.org](mailto:info@mountainland.org)>  
Reply-To: [jmcnulty@saratogaspringscity.com](mailto:jmcnulty@saratogaspringscity.com)  
To: [nkuhn@mountainland.org](mailto:nkuhn@mountainland.org)

Tue, Apr 12, 2011 at 10:00 AM

Over the past 6 months City staff and Mayor Love have spent a considerable amount of time working with MAG staff on the 2040 MTP. At this time, it appears that the proposed plan reflects what has been previously agreed to.

I also wanted to comment on the PRI/CPB property in the middle of our City. This property has recently been shown as an Agricultural Preservation area on your maps; however, this property was annexed into the City last fall and zoned PC, Planned Community which will allow for future retail/commercial, professional office, light industrial and a variety of residential uses. In addition, PRI recently held a design charrette for this property with City staff, elected officials as well as a number of governmental entities (including MAG) to create a City Center Master Plan for the future development of this area.

It's our understanding that the Mountain View Corridor is proposed to extend beyond SR-73 going southbound adjacent to and through the PRI/CPB property. Shortly after intersecting with Pony Express Parkway, it will then begin to turn to the west and progress up to the Hidden Valley area within Eagle Mountain, then eventually tie in with the proposed freeway alignment which will run north and south into Goshen, Elberta and back to Santaquin providing access to I-15. Thanks for allowing me to comment on the 2040 MTP.

Jim McNulty  
Planning Director  
Saratoga Springs

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**From:** Charlotte Ducos <[info@mountainland.org](mailto:info@mountainland.org)>  
**Date:** March 19, 2011 5:48:18 PM MDT  
**To:** [@mountainland.org](mailto:@mountainland.org)  
**Subject:** Comment on the 2040 MTP [Contact from [mountainland.org](mailto:mountainland.org)]  
**Reply-To:** [cdducos@gmail.com](mailto:cdducos@gmail.com)

I wish to comment on the proposed **Lake Mountain Freeway**, specifically the section that passes through Eagle Mountain through the Cedar Pass area. I live in North Ranch, one of a few neighborhoods that will be directly impacted by the proposed route of this freeway. Our properties are larger horse properties. If this freeway goes in as proposed, our Neighborhood and those next to us will be sandwiched in between a widened and busy Highway --SR73, and the Lake Mountain Freeway, both of which we would have limited access to, but maximum impact. Our quiet, rural neighborhood will be sandwiched by two of the most urban types of transportation found in the State. I do understand the need for this corridor. My comment and my hope is that you will do all in your power to work with Camp Williams to propose and obtain rights to a corridor that is set back slightly into the Camp Williams property to mitigate the impact to the neighborhoods that are adjacent to the corridor. A specific example and request would be that the corridor go BEHIND the hill that makes up the back side of North Ranch. That hillside would require massive cut and fill in order to carry a freeway corridor--leaving us not only sandwiched, but looking at an eyesore and with the traffic right at our back doors. Working to put the corridor on the back side of that hill gives us a buffer and makes the impact almost negligible. I recognize that this will take significant talks and negotiation with Camp Williams, but the effort does need to be made and creates a win-win. This type of planning will alleviate the majority of the concerns of residents in our area, while still allowing for the needed transportation corridor. Thank you for your time and consideration in this matter that is of utmost importance to the residents in my neighborhood and those that surround me. Have a great day. Charlotte Ducos

Bryan Johnson <info@mountainland.org>  
Reply-To: bombdiggidy33@gmail.com  
To: nkuhn@mountainland.org

Mon, Mar 21, 2011 at 9:56 AM

My comments are specific to the proposed Lake Mountain Freeway Saratoga Springs via the North Cedar Pass Alignment and East Eagle Mountain alignment. My home is located against the property line of Eagle Mountain and Camp Williams. When I moved my family from Virginia Beach to Utah County, we selected this area because of the rural feel and look to the area. My wife and I wanted to have some extra acreage for horses and for our family. We lived next to a freeway (with large cement walls protecting it) in Virginia. The noise was awful and was also a key driver in selecting the property we did when moving here. We even pulled up the county transportation plan as part of our homework for selecting our home. The past plank showed Route 73 expanding along with a potential highway going further North. This seemed ideal to us. This new plan, changes all of that and provides absolutely not service to the people that it will impact the most. According to this new plan, my home will have the freeway right behind it. I will now get to hear all of the freeway noise, which I am certain will cause problems with my horses and other animals. I will have no access near my home to get to the freeway easily. While I understand that plans can and should change, it would make more sense to me to keep the expansion of the roads that serve the central part of the population more centralized. Route 73 could easily be expanded to accommodate more traffic and Hidden Valley Expressway could remain the passage for the freeway (which it was proposed to be originally). The easements at Hidden Valley Expressway were set to accommodate a Freeway expansion in that location originally. The residents who purchased land next to it, bought that land with the expectation in mind that it become a freeway at some point. I believe this significant change in plan will dramatically impact the Meadow Ranch and North Ranch areas in a negative way. The people who bought property in these areas, bought it to get away from the noise and congestion. Our choices to be away from the more metropolitan areas should be considered along with this planning process. We are fully prepared and actually prefer the slight inconvenience of having to travel longer times to get where we want and need to go. Those who choose to live closer to metropolitan areas specifically choose to live in those locations knowing that they will have to deal with traffic and city related noise. I respectfully request that the freeway alignment be reviewed again. I ask that more consideration be given to not destroying the rural community lifestyles many of us in the Meadow Ranch and North Ranch areas chose. Especially since those of us who will be impacted most, with not benefit from it all, we have no access, no potential to sell our properties for commercial development and very little hope of having anyone who would be interested in our large property lots that cannot be split to sell them to if we wanted to move away. Please reconsider your proposals and move the freeway further South to where it was originally proposed to go, where it will not dramatically affect the people around it as they knew it was coming when they bought their homes and chose the lifestyles they did.

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## TRANSPORTATION AND COMMUNITY PLANNING OPEN HOUSES

Every year the MPO sponsors three Transportation and Community Planning Open Houses with UTA, UDOT, and the municipalities within the MPO. An open house allows the public to voice their opinions through written comments, one-on-one exchanges, and group discussions. These exchanges detect the changes the public would like to see in the coming years and staff incorporates their comments into proposed plans and reports.

All interested citizens, local elected officials, identified minority groups, public agencies, general public, private transportation providers, and segments of the community affected by transportation plans, programs and projects are invited.

In order to reach out to as many citizens as possible the open houses are held in conveniently located senior centers, in the northern, central, and southern parts of the county.

Written comments from all the Transportation & Community Planning Open Houses are on page 27.

### 2008

Total Attendees: 315

- Orem Friendship Senior Center
- Payson Senior Center
- American Fork Senior Center

### 2009

Total Attendees: 295

- American Fork Senior Center
- Orem Senior Center
- Springville Senior Center

#### AMERICAN FORK



### 2010

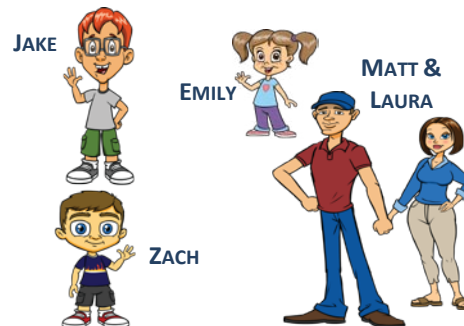
Total Attendees: 297

American Fork Senior Center  
Spanish Fork Senior Center  
Orem Friendship Senior Center

#### OREM SENIOR CENTER



#### MEET THE MAG FAMILY



THE MAG FAMILY  
HELPS KIDS  
LEARN ABOUT  
TRANSPORTATION

KID ACTIVITIES

CHARACTERS BY CARTOON SOLUTIONS

WWW.MOUNTAINLAND.ORG

## STUDIES

The MPO sponsored five studies between 2008 and 2011.

At the start of each study a website is created so the latest information is available to the general public and to receive comments.

The Mountainland MPO website has the final report for each study.

**WEST LAKE VISION STUDY**

2008-2009

6 Public Workshops / Open Houses

25 Attendees

**PROVO-OREM BUS RAPID TRANSIT**

**ENVIRONMENTAL ASSESSMENT**

2008-2011

Contact list of more than 500 people

47 meetings with Cities Staff, Representatives  
from the 2 universities and businesses along  
corridor, and Stakeholders

7 Open Houses for the General Public

**PROVO TO NEBO CORRIDOR STUDY**

2008-2009

48 attendees at Kick-Off June Meeting

185 attendees at March 2009 Open House

**NORTH COUNTY EAST WEST CORRIDOR STUDY**

2008-2009

8 Open Houses

285 attendees

**CENTRAL VALLEY BIKE/PED STUDY**

2010-2011

2 Open Houses

150 attendees



COMMENTS FROM THE TRANSPORTATION & COMMUNITY PLANNING OPEN HOUSES



Comment Card

Please leave the lake to be a place of serenity.  
It is ~~the~~ VITAL to the health of the community  
It is Rare & valuable to ~~the~~ our populace

Name: MARSHA McLEAN Address: 149 W 2970 W Provo 84601  
Organization: Sierra Club City/Zip:  
Phone: 801-380-2076  
How did you learn about the Open House: postcard invitation



COMMENTS

Very interesting stuff especially  
the fire stuff regarding

Name: Devin Dickson Mail: Mountainland Association of Governments  
Address: 982 W 400 W Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146  
E-mail Address: E-mail comments to: nkuhn@mountainland.org



COMMENTS

Very informative. I am always interested in the future. The displays are great. I wish it were in a larger facility but it was still good.

Name: Louanna Burton  
Address: 1055 S. 540 W  
Lehi, UT 84043

Mail: Mountainland Association of Governments  
Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146



COMMENTS

Well represented by the cities of MAG. Didn't see UDOT people. I missed their booth

Thank you

Name: Jim Laurel  
Address: 1869 N. 80 East  
Orem, UT 84057

Mail: Mountainland Association of Governments  
Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146



COMMENTS

Put TRAX on American Fork's Main Street to show the traffic from the Pioneer Crossing project. TRAX will also help pedestrian traffic in downtown American Fork.

Name: George Brown  
Address: \_\_\_\_\_

Mail: Mountainland Association of Governments  
Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146

E-mail Address: \_\_\_\_\_

E-mail comments to: [nkuhn@mountainland.org](mailto:nkuhn@mountainland.org)



COMMENTS

Amazing!

Well done display.

Get to work on the well-planned work

Name: Reid & Norma Williamson  
Address: 533 E. 1000 S.  
Orem, UT 84097

Mail: Mountainland Association of Governments  
Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146

E-mail Address: \_\_\_\_\_

E-mail comments to: [nkuhn@mountainland.org](mailto:nkuhn@mountainland.org)

## PUBLIC PARTICIPATION



## COMMENTS

The presentation was well done. There was a great deal of information for the Public.

I suggest that MAG reconsider the roads in Highland area North of American Fork. 10400 North should be extended to Lone Peak High School for the safety of the students.

I think the Pioneer Crossing Project will create some of the traffic problems for American Fork that it is designed to solve for Lehi. How do we address that problem?

Name: George Brown

Address: \_\_\_\_\_

Mail: Mountainland Association of Governments  
Regional Transportation Plan  
586 East 800 North  
Orem, UT 84097-4146



## COMMENTS

Good Great talk I-15 Building  
Lehi to Spanish Fork and Utah train - Bus  
Utah Co and City Payson Thanks  
nice Talk I Glad

Shane Pace

Name: Shane Pace

Address: 344 E 400 S

Payson, Utah 84651

E-mail Address: \_\_\_\_\_

Mail: Mountainland Association of Governments  
Regional Planning  
586 East 800 North  
Orem, UT 84097-4146





## COMMENTS

I think it is just fantastic that you hold these open houses. ~~The~~ The analysis on the Utah County Highway grid is quite interesting and the professional people are so well-versed and open to questions. I was here for an hour before you closed down. I wish I had come earlier to see more. My professional consulting & research is about gathering early information in a development project so I found the modeling very interesting. Thanks for all your work.

Name: BRENT BARNETT

Address: 621 E Sageseed Ave  
Provo UT 84604Mail: Mountainland Association of Governments  
Regional Planning  
586 East 800 North  
Orem, UT 84097-4146

We appreciate the event tonight.  
It was very helpful & informative.  
We support many of the projects  
regarding buses, light rail and bus  
trails.  
Our main concern is that 800 So. in  
Orem be protected as a residential  
street and not be widened. Our desire  
would be to see 800 So. sealed off from  
the university and commuter  
traffic.  
Thank you,  
Bri & Julie  
Young, Orem

Very Interesting!  
Thanks for informing us!  
Looks like you all do  
super work!!  
😊

-Kx

Thank you. It was informative.  
We appreciate your time in  
putting it on today -

Great info! Would love to  
see work done on Orem state  
street south to I89 headed  
for Spanish Fork. This road  
needs major shoulder work  
for safe cycling! Thanks

Great concept!  
Great learning opportunity!  
Great cookies!  
Thanks



Great information and answers!

Could we please get a shoulder and a bike lane along I-89 headed south from Provo to Spanish Fork? Competing with highway speed has been very dangerous for bikes wanting a more direct route to southern Utah county.

Great info. enjoyed the interaction

I would have liked to see more pertaining to bicycling in Utah Valley. As suggestion 500 W in Provo desperately needs some bicycle lane. ~~WAAAA~~

Great things require hard work... so let's now all get to work making Utah County even better.

Not good enough!

It is all Provo North and years before it gets to Payson — a waste of time.